

Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

STATE TECHNICAL SERVICES ACT OF 1965

PLEASE RETURN TO USDA
NATIONAL AGRICULTURAL LIBRARY
LAW BRANCH, LEGISLATIVE REPORTING,
Rm. 117-E, Admin Bldg.
Wash. D. C. Ext. 4654

32

HEARINGS

BEFORE THE

SUBCOMMITTEE ON COMMERCE AND FINANCE

OF THE

COMMITTEE ON

INTERSTATE AND FOREIGN COMMERCE

HOUSE OF REPRESENTATIVES

EIGHTY-NINTH CONGRESS

FIRST SESSION

ON

H.R. 3420

A BILL TO PROMOTE ECONOMIC GROWTH BY SUPPORTING
STATE AND REGIONAL CENTERS TO PLACE THE FINDINGS
OF SCIENCE USEFULLY IN THE HANDS OF AMERICAN
ENTERPRISE
(AND IDENTICAL BILLS)

JUNE 1, 2, AND 3, 1965

Serial No. 89-15

Printed for the use of the
Committee on Interstate and Foreign Commerce



U.S. GOVERNMENT PRINTING OFFICE
WASHINGTON : 1965

COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE

OREN HARRIS, Arkansas, *Chairman*

HARLEY O. STAGGERS, West Virginia	WILLIAM L. SPRINGER, Illinois
WALTER ROGERS, Texas	J. ARTHUR YOUNGER, California
SAMUEL N. FRIEDEL, Maryland	SAMUEL L. DEVINE, Ohio
TORBERT H. MACDONALD, Massachusetts	ANCHER NELSEN, Minnesota
JOHN JARMAN, Oklahoma	HASTINGS KEITH, Massachusetts
LEO W. O'BRIEN, New York	WILLARD S. CURTIN, Pennsylvania
JOHN E. MOSS, California	GLENN CUNNINGHAM, Nebraska
JOHN D. DINGELL, Michigan	JAMES T. BROYHILL, North Carolina
PAUL G. ROGERS, Florida	JAMES HARVEY, Michigan
HORACE R. KORNEGAY, North Carolina	TIM LEE CARTER, Kentucky
LIONEL VAN DEERLIN, California	HOWARD H. CALLAWAY, Georgia
J. J. PICKLE, Texas	
FRED B. ROONEY, Pennsylvania	
JOHN M. MURPHY, New York	
DAVID E. SATTERFIELD III, Virginia	
DANIEL J. RONAN, Illinois	
J. OLIVA HUOT, New Hampshire	
JAMES A. MACKAY, Georgia	
JOHN J. GILLIGAN, Ohio	
CHARLES P. FARNSLEY, Kentucky	
JOHN BELL WILLIAMS, Mississippi	

W. E. WILLIAMSON, *Clerk*

KENNETH J. PAINTER, *Assistant Clerk*

Professional Staff

ANDREW STEVENSON
KURT BORCHARDT

JAMES M. MENDER, Jr.
WILLIAM J. DIXON

SUBCOMMITTEE ON COMMERCE AND FINANCE

TORBERT H. MACDONALD, Massachusetts, *Chairman*

JOHN D. DINGELL, Michigan	HASTINGS KEITH, Massachusetts
J. OLIVA HUOT, New Hampshire	WILLARD S. CURTIN, Pennsylvania
CHARLES P. FARNSLEY, Kentucky	

CONTENTS

	Page
Hearings held on—	
June 1, 1965-----	1
June 2, 1965-----	45
June 3, 1965-----	83
Text of H.R. 3420-----	2
Report of—	
Bureau of the Budget-----	9
Commerce, Department of-----	6
Comptroller General of the United States-----	8
Statement of—	
Arnold, Chris, associate executive assistant for the Society of Land-Grant Colleges-----	70
Brown, Hon. George E., Jr., a Representative in Congress from the State of California-----	15
Bunting, J. Whitney, dean, College of Business Administration and Graduate School of Business Administration, University of Georgia-----	83
Caldwell, John T., chancellor, North Carolina State University-----	70
Calhoun, John C., Jr., vice chancellor for programs, Texas A. & M. University, College Station, Tex-----	51
Connor, Hon. John T., Secretary of Commerce-----	16
Conte, Hon. Silvio O., A Representative in Congress from the State of Massachusetts-----	9
Corman, Hon. James C., a Representative in Congress from the State of California-----	11
Easton, Dr. D. Mack, dean of the Extension Division of the University of Colorado-----	70
Faiman, Dr. Robert N., dean of the College of Technology, University of New Hampshire-----	70
Giles, Robert E., General Counsel, Department of Commerce-----	16
Hollomon, J. Herbert, Assistant Secretary for Science and Technology, Department of Commerce-----	16
Lynch, Milton F., general counsel, National Society of Professional Engineers-----	109
Mackay, Hon. James A., a Representative in Congress from the State of Georgia-----	83
Mauder, Sydney T., electrical engineer, visiting lecturer, University of Massachusetts, Amherst, Mass-----	64
McVicker, Hon. Roy H., a Representative in Congress from the State of Colorado-----	49
Patton, William D., legislative counsel, National Society of Professional Engineers-----	109
Pepper, Hon. Claude, a Representative in Congress from the State of Florida-----	45
Pickle, Hon. J. J., a Representative in Congress from the State of Texas-----	86
Ratchford, Dr. Brice, dean of the university extension, University of Missouri-----	70
Schmidhauser, Hon. John R., a Representative in Congress from the State of Iowa-----	13
Stephens, Hon. Robert G., Jr., a Representative in Congress from the State of Georgia-----	87
Wegner, Waldo W., director for the Center for Industrial Research and Service, Iowa State University, Ames, Iowa-----	94
Westerlund, Barton A., Ph. D., associate director, Industrial Research and Extension Center, University of Arkansas-----	88

Additional information submitted for the record by—

Commerce Department:

General statement about existing State programs of technical assistance to industry.....	Page 42
Letters from Hon. John T. Connor, Secretary.....	41, 122
Office of State Technical Services, proposed staffing to be built up during first year, table.....	123
Connecticut Development Commission, letter from LeRoy Jones, managing director.....	130
Consulting Engineers Council, letter from Leonard K. Crawford, president.....	125
Council of Economic Advisers, letter from Gardner Ackley, Chairman.....	123
Lederle, John W., president, University of Massachusetts, letter from.....	10
Mississippi Research & Development Center, letter from Robert F. Dye, acting director.....	126
Mullins, David W., president, University of Arkansas, letter from.....	124
National Association of Manufacturers, statement of.....	128
National Society of Professional Engineers, proposed amendments to H.R. 3420.....	112
New England Council, statement of James S. Hostetler.....	121
Taylor, George A., letter from.....	127

STATE TECHNICAL SERVICES ACT OF 1965

TUESDAY, JUNE 1, 1965

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON COMMERCE AND FINANCE
OF THE COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE,
Washington, D.C.

The subcommittee met, pursuant to notice, at 10 a.m., in room 2123, Rayburn House Office Building, the Honorable Torbert H. Macdonald (chairman of the subcommittee) presiding.

Mr. MACDONALD. The hearing will come to order.

The subcommittee meets this morning to receive testimony on H.R. 3420, a bill which would permit the Federal Government to participate with State governments, universities, and industries within particular States in stimulating the industrial and economic growth of States and regions in the Nation through the application of science and technology. This proposed legislation resulted from President Johnson's direction to the Department of Commerce to explore new ways to speed the development and dissemination of new technology. In his Economic Report of January 1964, the President states:

The Federal Government provides major support for the research and development which underlie our striking technological advances. In the past, much of our research and development has been connected with national defense. Now, as military outlays level off we face—

A challenge to apply the Nation's growing scientific and engineering resources to new socially profitable uses; and

An opportunity to accelerate the technological progress of our civilian industries.

The Federal Government should join with private business and our universities in speeding the development and spread of new technology. I have directed the Department of Commerce to explore new ways to accomplish this.

What I have said in substance has been transmitted to us in correspondence from the Department of Commerce.

This morning we will have the pleasure of hearing from Secretary of Commerce John T. Connor, who is accompanied by J. Herbert Hollomon, Assistant Secretary for Science and Technology.

I believe that it is generally recognized that the bill does not get down to specifics. We hope to, and expect to, make a record which will establish for all of us the pros and cons of legislation of this kind. This is a significant and far-reaching subject.

At this time I will call to the witness stand a friend and colleague of mine from the great Commonwealth of Massachusetts, the Honorable Silvio O. Conte, who has introduced a bill H.R. 7708, which is identical to the bill introduced by the distinguished and able chairman of our committee, H.R. 3420, and also to bills H.R. 3960 filed by the gentleman from California, Mr. Roosevelt; H.R. 4235 by Mr. Cohelan of California; H.R. 4810 by the gentleman from Georgia, Mr. Stephens;

H.R. 4879, by the gentleman from New Hampshire, our colleague on the subcommittee, Mr. Huot; H.R. 4963, filed by the gentleman from California, Mr. Miller; H.R. 6026 filed by the gentleman from California, Mr. Corman; H.R. 7335 filed by Mr. McVicker, of Colorado; H.R. 7339 filed by the gentleman from Pennsylvania, Mr. Fulton; H.R. 7474 filed by the gentleman from Maryland, Mr. Mathias; H.R. 7498, filed by the gentleman from Florida, Mr. Pepper; H.R. 7501, filed by the gentleman from Iowa, Mr. Schmidhauser; and H.R. 8049 filed by the gentleman from California, Mr. Brown.

(H.R. 3420, and reports thereon, follows:)

[H.R. 3420, 89th Cong., 1st sess.]

A BILL To promote economic growth by supporting State and regional centers to place the findings of science usefully in the hands of American enterprise

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

DECLARATION OF PURPOSE

SECTION 1. That Congress finds that wider diffusion and more effective application of science and technology in industry are essential to the growth of the economy, to higher levels of employment and to the competitive position of United States products in world markets. The Congress also finds that the benefits of federally financed research, as well as other research, must be placed more effectively in the hands of American business and enterprise. The Congress further finds that the several States through cooperation with universities, communities, and industries can contribute significantly to these purposes by providing technical services designed to encourage a more effective application of science and technology to both new and established industries. The Congress, therefore, declares that the purpose of this Act is to provide a national program of incentives and support for the several States individually and in cooperation with each other in their establishing and maintaining State and regional technical service programs designed to achieve these ends.

DEFINITIONS

SEC. 2. For the purposes of this Act—

(a) "Technical services" means activities or programs designed to enable businesses and industries to acquire and use scientific and engineering information more effectively through such means as—

(1) analyzing problems of regions and industries to determine new opportunities for applying technology;

(2) preparing and disseminating technical reports, abstracts, computer tapes, microfilm, reviews and similar scientific or engineering information, including the establishment of State or regional technical information centers for this purpose;

(3) providing a reference service to identify sources of engineering and other scientific expertise; and

(4) sponsoring industrial workshops, seminars, training programs, extension courses, demonstrations and field visits designed to encourage the more effective application of scientific and engineering information.

(b) "Designated institution" means the institution or agency in each participating State, which has been designated as administrator of the program for such State under section 3 of this Act.

(c) "Qualified institution" means (1) an institution of higher learning with a program leading to degrees in engineering or business administration which is accredited by a nationally recognized accrediting agency or association to be listed by the United States Commissioner of Education, or such an institution which is listed separately after evaluation by the United States Commissioner of Education pursuant to this subsection; or (2) a State agency or a private, non-profit institution which meets criteria of competence established by the Secretary of Commerce and published in the Federal Register. For the purpose of this Act, the United States Commissioner of Education shall publish a list of nationally recognized accrediting agencies or associations which he determines to be reliable

authority as to the quality of engineering or business education or training offered. When the Commissioner determines that there is no nationally recognized accrediting agency or association qualified to accredit such programs, he shall publish a list of institutions he finds qualified after prior evaluation by an advisory committee, composed of persons he determines to be specially qualified to evaluate the training provided under such programs.

(d) "Participating institution" means each qualified institution in a State, which participates in the administration or execution of the State technical services program as provided by this Act.

(e) "Secretary" means the Secretary of Commerce or the official to whom the Secretary has delegated all or part of the authority in this Act.

(f) "State" means one of the States of the United States, the District of Columbia, the Commonwealth of Puerto Rico, or the Virgin Islands.

PLANS AND PROGRAMS

SEC. 3. Any State which wishes to receive Federal payments under this Act in support of its existing or planned technical services program shall designate under appropriate State laws and regulations, an institution or agency to administer and coordinate that program and to prepare and submit plans and programs to the Secretary of Commerce for approval under this Act. If the institution or agency designated by each State is not a State university or land-grant college entitled to benefits under the Act approved July 2, 1862, or the Act of August 30, 1890, and Acts amendatory and supplementary thereto (1 U.S.C. 301-329), the Governor or other competent State authority shall furnish the Secretary a written statement of his reasons for designating such other institution or agency.

SEC. 4. The designated institution shall prepare and submit to the Secretary in accordance with such regulations as he may publish—

(a) At the beginning of each five-year period, a five-year plan which may be revised annually and which shall (1) outline the technological and economic conditions of the State taking into account its region, its industry, and its industrial potential and identify the major regional and industrial problems; (2) identify the general approaches and methods to be used in the solution of these problems and outline the means for measuring the impact of such assistance on the State or regional economy; and (3) explain the methods to be used in administering and coordinating the program.

(b) An annual technical services program which shall (1) identify specific methods, which may include contracts, for accomplishing particular goals and outline the likely impact of these methods in terms of the five-year plan; (2) contain a detailed budget, together with procedures for adequate fiscal control, fund accounting, and auditing, to assure proper disbursement for funds paid to the State under this Act; and (3) indicate the specific responsibilities assigned to each participating institution in the State.

SEC. 5. The Secretary shall not accept a five-year plan for review and approval under this Act unless the Governor of the State or his designee determines and certifies that the plan is consistent with State policies and objectives; and the Secretary shall not accept an annual technical services program for review and approval under this Act unless the designated institution has, as certified thereto by the Governor or his designee—

(a) invited all qualified institutions in the State to submit proposals for providing technical services under the Act;

(b) coordinated its programs with other States and with other publicly supported activities within the State, as appropriate;

(c) established adequate rules to insure that no officer or employee of the State, the designated institution or any participating institution, shall receive compensation for technical services for which funds are provided under this Act from sources other than his employer and shall not otherwise maintain any private interest in conflict with his public responsibility;

(d) determined that matching funds will be available from State or non-Federal sources;

(e) determined that such technical services program does not provide a service performed as practicably by private technical services, professional consultants or private institutions;

(f) planned no services specially related to a particular firm or company except insofar as the services are of general concern to the community, State or region;

(g) provided for making public all reports prepared in the course of furnishing technical services supported under this Act or for making them available at cost to any person on request.

APPROVAL BY SECRETARY OF COMMERCE

SEC. 6. The Secretary shall review each five-year plan and each annual program submitted by the designated institution under section 4, or by the regional or interstate institution under section 7, and shall approve only those which (1) bear the certification required by the Governor or his designee under section 5; (2) comply with regulations and meet criteria that the Secretary shall promulgate and publish in the Federal Register; and (3) otherwise accomplish the purposes of this Act.

REGIONAL OR INTERSTATE PROGRAMS

SEC. 7. Two or more States may cooperate in administering and coordinating their plans and programs supported under this Act, in which event all or part of the sums authorized and payable under section 11 to all of the cooperating States may be paid to the institutions or persons authorized to receive them under the terms of the agreement between the cooperating States. When the cooperative agreement designates a regional or interstate institution to act on behalf of all of the cooperating States, it shall submit to the Secretary for review and approval under section 6 a regional or interstate five-year plan and annual regional or interstate technical services program which, as nearly as practicable, shall meet the requirements of section 4 and section 5.

SEC. 8. Notwithstanding the provisions of section 11, the Secretary is authorized to increase by 10 per centum the amount which he approves for any regional or interstate technical services program submitted under section 7. Such additional amount may be paid without requiring matching funds from State or non-Federal sources.

SEC. 9. The consent of the Congress is given to any two or more States to enter into agreements or compacts, not in conflict with any law of the United States, for cooperative efforts and mutual assistance in establishing regional or interstate institutions under section 7 for accomplishing the purposes of this Act.

ADVISORY COUNCIL

SEC. 10. Each designated institution and each regional or interstate institution shall establish an advisory council for technical services, the members of which shall represent broad community interests and shall be qualified to evaluate programs submitted under section 4. The advisory council shall review each annual program, evaluate its relation to the purposes of this Act, and report its findings to the designated institution and the Governor or his designee. Each report of the advisory council shall be available to the Secretary on request.

ADMINISTRATION AND PAYMENTS

SEC. 11. There is authorized to be appropriated such amounts as may be needed to carry out the purposes set forth in this section.

(a) From these amounts, the Secretary is authorized to make an annual payment to each designated institution, regional or interstate institution, or person authorized to receive payments in support of each approved technical services program. Maximum amounts which may be paid to the States under this subsection shall be fixed in accordance with regulations which the Secretary shall promulgate and publish in the Federal Register from time to time, considering (1) population according to the last decennial census; (2) industrial and economic development and productive efficiency; and (3) technical resources.

(b) The Secretary may reserve an amount equal to not more than 20 per centum of the total amount appropriated each year under this section and is authorized to make payments to any designated or participating institution for technical services programs which he determines have special merit or to any qualified institution for additional programs which he determines are necessary to accomplish the purposes of this Act, under criteria and regulations that he shall promulgate and publish in the Federal Register.

(c) An amount equal to not more than 5 per centum of the total amount appropriated each year under this section shall be available to the Secretary for the direct expenses of administering this Act.

(d) No amount paid under subsection (a) shall exceed one-half of the cost of the approved annual technical services program of the State, and for each dollar paid under subsections (a) and (b) there shall be available for expenditure on each approved program at least \$1 from State or non-Federal sources: *Provided*, That the Secretary may pay an amount not to exceed \$25,000 a year for each

of the first three fiscal years to each designated institution to assist in the preparation of the first five-year plan and the initial annual technical services programs, without regard to any requirement of this section.

(e) At the end of each fiscal year, all remaining amounts which are appropriated for payments to the States under subsection (a) and which have not been obligated for payments to the States at that time, shall be available to the Secretary for payments under subsection (b), until expended.

SEC. 12. The Secretary is authorized and directed to aid the States and regions in carrying out their technical services programs by providing reference services which a State or region may use to obtain scientific, technical, and engineering information from sources outside the State or region, for the purposes of this Act. There is authorized to be appropriated each fiscal year such amount as may be necessary to provide the services authorized in this section.

SEC. 13. The Secretary is authorized to establish such policies, standards, criteria, and procedures and to prescribe such rules and regulations as he may deem necessary or appropriate for the administration of this Act.

LIMITATIONS

SEC. 14. (a) Nothing contained in this Act shall be construed as authorizing a department, agency, officer, or employee of the United States to exercise any direction, supervision, or control over, or impose any requirements or conditions with respect to the personnel, curriculum, methods of instructions, or administration of any educational institution.

(b) Nothing contained in this Act shall be deemed to affect the functions or responsibilities under law of any other department or agency of the United States.

EVALUATION

SEC. 15. Within five years from the date of the approval of this Act, and prior to the end of each five-year period thereafter, the Secretary shall appoint a public committee, none of the members of which shall have been directly concerned with the preparation of plans, administration of programs or participation in programs under this Act. The committee shall evaluate the significance and impact of the program under this Act and make recommendations concerning the program. A report shall be transmitted to the Secretary within sixty days after the end of each five-year period.

ANNUAL REPORT

SEC. 16. Each designated institution or regional or interstate institution shall make an annual report to the Secretary on or before the first day of September of each year on the work accomplished under the technical services program and the status of current services, together with a detailed statement of the amounts received under any of the provisions of this Act during the preceding fiscal year, and of their disbursement.

TERMINATION

SEC. 17. Whenever the Secretary, after reasonable notice and opportunity for hearing to any institution receiving funds under this Act finds that—

(a) the institution is not complying substantially with the provisions of this Act, with the regulations promulgated by the Secretary, or with the approved annual technical services program; or

(b) any funds paid to the institution under the provisions of this Act have been lost, misapplied, or otherwise diverted from the purposes for which they were paid or furnished.

the Secretary shall notify such institution that no further payments will be made under the provisions of this Act until he is satisfied that there is substantial compliance or the diversion has been corrected or, if compliance or correction is impossible, until such institution repays or arranges for the repayment of Federal funds which have been diverted or improperly expended.

SEC. 18. Upon notice by the Secretary to any institution that no further payments will be made pending substantial compliance correction or repayment under section 17, any funds which may have been paid to such institution under this Act and which are not expended by the institution on the date of such notice, shall be repaid to the Secretary and be deposited to the account of the appropriations from which they originally were paid.

SHORT TITLE

SEC. 19. This Act may be cited as the "State Technical Services Act of 1965".

GENERAL COUNSEL OF THE DEPARTMENT OF COMMERCE,
Washington, D.C., March 15, 1965.

Hon. OREN HARRIS,
*Chairman, Committee on Interstate and Foreign Commerce,
House of Representatives, Washington, D.C.*

DEAR MR. CHAIRMAN: This is in reply to your request for the views of this Department concerning H.R. 3420, a bill to promote economic growth by supporting State and regional centers to place the findings of science usefully in the hands of American enterprise.

H.R. 3420 is for the same purpose as the draft of legislation submitted to the Congress by this Department on January 15, 1965. The Department urges early enactment of H.R. 3420 for the reasons set forth in the statement of purpose and need submitted to the Congress with our draft bill. A copy of the statement of purpose and need is attached for your convenient reference.

We have been advised by the Bureau of the Budget that enactment of this legislation would be in accord with the program of the President.

Sincerely,

ROBERT E. GILES.

STATEMENT OF PURPOSE AND NEED ON PROPOSED STATE TECHNICAL SERVICES ACT OF 1965

This proposed legislation is in response to President Johnson's direction to the Department of Commerce to explore new ways to speed the development and dissemination of new technology. In his Economic Report of January 1964, the President stated:

"The Federal Government provides major support for the research and development which underlie our striking technological advances. In the past, much of our research and development has been connected with national defense. Now, as military outlays level off we face—

"A challenge to apply the Nation's growing scientific and engineering resources to new socially profitable uses;

"An opportunity to accelerate the technological progress of our civilian industries.

"The Federal Government should join with private business and our universities in speeding the development and spread of new technology. I have directed the Department of Commerce to explore new ways to accomplish this."

GENERAL DESCRIPTION

The proposed State Technical Services Act of 1965 would enable the Federal Government to make grants to States in support of programs to achieve more effective commercial use of the findings of science and technology. This would be done through technical services programs, planned locally, designed specifically to place these findings into the hands of local businesses and enterprises.

To qualify for Federal matching funds, a State would designate an institution or agency responsible for preparing and administering technical services programs within the State. A regional institution could be designated where two or more States wish to join in a cooperative program (10 percent more Federal support would be available for regional institutions). State and regional programs would be formulated and put into effect with local or regional initiative and responsibility. All qualified institutions in the State could participate.

NEED FOR THE PROGRAM

A close examination of the modern American economy reveals a number of recurring themes—all of them related in some degree to the importance of having effective mechanisms for introducing the results of science and technology into commercial use. For example:

The competition we face in both domestic and world markets is increasingly based on a high level of technology, not solely on lower labor costs.

The most successful competitors, whether at an international level, industrywide, or among individual companies, are those who have learned to use new technology effectively.

The cost of new technology, in the form of technical manpower and equipment, has been rapidly rising.

Opportunities to participate in benefits of technology have not been equally available in the various regions of the United States.

Substantial expenditures for specialized research and development in support of national defense and space missions have not met the full range of industrial needs for technology.

The vast increase in the Nation's total research and development effort have not eradicated long-term unemployment and economic decline in many parts of the country.

Technology cannot be effectively diffused merely by giving information to a potential user. There must be means for active interchange between those using and those furnishing information.

There are many factors involved in complete solutions to the broad problems outlined above. Common to all of them, however, is the need for institutions and mechanisms at the local level, specifically designed to bridge the gap between the most advanced technology, wherever it exists, and the industrial practices of the local region.

OBJECTIVES

Through this program and with the cooperation of universities, communities and industries, three objectives will be served: (1) strengthening the Nation's economy by upgrading industries through the utilization of advanced technology, thereby generally expanding the industrial base; (2) increasing employment by facilitating industrial's use of technology and the manufacturing of new products which result; and (3) enhancing the competitive position of U.S. products in world markets.

The proposal is based on the premise of strong local support and local initiative. The proposal is designed to stimulate local economic programs, utilizing local specialists and applying local resources with Federal matching support and encouragement. Distinct contributions to the economic vitality of our Nation will be made by those who are closest to the problems which the program is designed to meet.

HOW THE PROGRAM WOULD OPERATE

A State wishing to participate in the program would designate an institution (generally a State university or land-grant college) to administer and coordinate the State's technical services program.

The designated institution would prepare a 5-year plan, outlining the technological and economic situation in the State, the major regional and industrial problems, and the means to be used in assisting in their solution.

The designated institution would also prepare an annual technical services program, covering the objectives for the first year, the budget, and the responsibilities assigned to each qualified institution participating in the program. Up to \$25,000 per year for each of the first 3 years may be paid to the designated institution to assist in preparing the first 5-year plan and the initial annual programs.

An advisory council would be established by the designated institution to evaluate and report on the 5-year plan and the annual technical service program.

The 5-year plan and the annual program would be submitted to the Secretary of Commerce. Federal matching funds would be made available to the designated institution to support those programs found by the Secretary to meet legal requirements and to further the purposes of the act. The maximum annual payment in support of any State program will be limited by a formula to be established by the Secretary, taking into consideration three criteria: (1) Population according to the last census; (2) industrial and economic development and productive efficiency; and (3) technical resources. Supplementary matching grants, totaling up to 20 percent of the amount appropriated each year, may also be made to support programs which the Secretary determines have special merit. These provisions are designed to assure that the program's benefits will be widely diffused throughout the Nation while at the same time reserving sufficient discretion to the Secretary to assure that funds are granted only in support of adequately developed programs which will in fact advance the purposes of the act.

The formula to be established by the Secretary will be based on objective considerations such as the proportion of working population gainfully employed, the ratio of assets of individual establishments to employees, urban population, industrial population, numbers of scientists and engineers, and the physical research facilities used for industrial purposes. The formula will be weighted to provide funds to States and regions where industrial development has lagged behind its potential and where technical resources are weak. The population criteria will be applied in a manner which will permit even the smallest States to participate in a meaningful program.

New plans are required at 5-year intervals, although they are to be revised if necessary. Annual technical services programs must be submitted to the Secretary of Commerce each year in order to qualify for annual matching funds. In administering the program and approving plans, the Secretary would consult with other agencies of the Federal Government as appropriate. An annual report is required at the conclusion of each year.

Once in operation, there is a wide variety of technical services which might be offered by the various institutions participating in the program within a particular State. For example, a technology diffusion program oriented to the needs and problems of a specific industry dominant in one State or region might offer workshops, seminars, and demonstrations in order to bring existing technology to local entrepreneurs for use in plants within the region. A technology dissemination and referral center could offer two types of services: (1) technical reports abstracts, bibliographies, reviews, microfilm, computer tapes, and the like; and (2) referral to sources of scientific and engineering expertise in the fields of interest to the local industry. Such a center would be in continuous interaction with local business and industry, so that its services will be pertinent to the local economy. These examples by no means exhaust the list of possible technical services that might be offered in any State program. The range of services can be as wide as the range of industrial and technological interests in this country, and, within the bounds of the act, is only limited by the imagination and initiative of the persons who develop the State program.

COST

The cost to the Federal Government of the proposed program is expected to be in the range of \$5 to \$10 million for the first year and such amounts as may be necessary for effective future programs which the States justify to the Secretary of Commerce.

All funds made available to States for technical services, except regional incentives, would be matched at least equally by non-Federal funds. Direct Federal expenditures would be limited to expenditures for administration, to be held to less than 5 percent of the cost of the program, and for reference services to aid the States and regions in collecting and processing technical information for dissemination to industry under the act.

These funds will be an investment in promoting the economic growth and widespread industrial development of the entire Nation.

COMPTROLLER GENERAL OF THE UNITED STATES,
Washington, D.C., March 15, 1965.

B-156076.

Hon. OREN HARRIS,
Chairman, Committee on Interstate and Foreign Commerce,
House of Representatives.

DEAR MR. CHAIRMAN: By letter dated February 16, 1965, you requested our report on H.R. 3420. The stated purpose of this measure is to promote economic growth by supporting State and regional centers to place the findings of science usefully in the hands of American enterprise.

While we have no special information that would assist the committee in its consideration of the merits of H.R. 3420, we offer the following comments on certain aspects of the measure:

Inasmuch as the grants made to the institutions described in the bill would involve the expenditure of appropriated funds, it is our understanding that these expenditures would be subject to audit and review by this office, with such reports to the Congress as may be deemed necessary under the provisions of the Budget and Accounting Act, 1921 (31 U.S.C. 53) and the Accounting and Auditing Act of 1950 (31 U.S.C. 67). We note, however, that the bill would not expressly grant the Secretary of Commerce or the Comptroller General the right to examine pertinent books, records, and documents of the institutions and agencies receiving Federal grants under the provisions of the bill. We believe that access to such records is necessary for the adequate administration and audit of a grant program, and we therefore suggest that the bill be amended by including a section substantially as follows:

"Each recipient of a grant under this act shall keep such records as the Secretary shall prescribe, including records which fully disclose the amount and the dis-

position of such grant, the total cost of the related approved program, the amount and nature of the cost of the program supplied by other sources, and such other records as will facilitate an effective audit.

"The Secretary and the Comptroller General of the United States, or any of their duly authorized representatives, shall have access to any books, documents, papers, and records of the recipient that are pertinent to amounts paid under this act."

Section 5(g) of H.R. 3420 would require that all reports prepared in the course of furnishing technical services supported under the bill be made public or be made available at cost to any person on request. It is not clear whether, for the purposes of the bill, the cost of the reports is intended to include only the costs of printing and distribution or the full cost of preparing the reports, including research, administrative, and other costs.

Section 11(c) provides that up to 5 percent of the total amount appropriated each year shall be available for direct expenses of administration. We believe that funds for administrative expenses should be provided by the Congress each year in a specified amount on the basis of the proposed program for such fiscal year.

We have no further comments to make concerning H.R. 3420.

Sincerely yours,

JOSEPH CAMPBELL,
Comptroller General of the United States.

EXECUTIVE OFFICE OF THE PRESIDENT,
BUREAU OF THE BUDGET,
Washington, D.C., May 28, 1965.

HON. OREN HARRIS.

*Chairman, Committee on Interstate and Foreign Commerce,
House of Representatives, Washington D.C.*

DEAR MR. CHAIRMAN: This is in response to your request for the views of the Bureau of the Budget on H.R. 3420, a bill to promote economic growth by supporting State and regional centers to place the findings of science usefully in the hands of American enterprise.

You are advised that enactment of H.R. 3420 would be in accord with the President's program.

Sincerely yours,

PHILLIP S. HUGHES,
Assistant Director for Legislative Reference.

Mr. MACDONALD. At this time I recognize the gentleman from Massachusetts, Mr. Conte.

STATEMENT OF HON. SILVIO O. CONTE, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MASSACHUSETTS

Mr. CONTE. Mr. Chairman, members of the committee, it is certainly a pleasure to appear before this subcommittee chaired by my good friend and able Congressman colleague from Massachusetts, Torby Macdonald. Mr. Chairman, in order to save time I will submit my statement and also a letter from Dr. Lederle, president of the University of Massachusetts.

Mr. MACDONALD. Without objection, it is so ordered.
(The documents referred to follow:)

REMARKS OF HON. SILVIO O. CONTE

Mr. Chairman, members of the subcommittee, I wish to thank you for the opportunity you have afforded me this morning to testify in behalf of my bill, H.R. 7708, which I introduced on April 28 of this year. My bill is identical to the one introduced by our colleague from Arkansas, Congressman Harris.

It was a pleasure to introduce a bill which would promote the economic growth of not only my district—the First Congressional District, but also of my State,

Massachusetts; and the country. The bill would accomplish this by providing federally supported State and regional centers under a State Technical Services Act. These centers established at a local university, a State agency, or a private nonprofit institution would be required to meet certain criteria of competence instituted by the Secretary of Commerce and published in the Federal Register.

In many respects this bill is similar in concept to the Agricultural Extension Act. Under that act, farmers are able to go to State institutions in order to find solutions to their problems. Under the provisions of this act, H.R. 7708, businessmen would now be able to receive help at State institutions or regional institutions to meet the demands of an ever-increasing technology.

These centers would place the findings of science and technology in the hands of businessmen. I am particularly pleased that it would, most likely, place such information in the hands of small businessmen. They are the ones who are most often unable to meet the pressing problems which they face, because of lack of funds, or simply because they do not know where to turn.

It is axiomatic that wider diffusion and more effective application of science and technology in industry and business is essential to the growth of the American economy. It is necessary if we are to maintain and increase present levels of employment. It is necessary if we are to successfully compete for world markets, while maintaining a high level of income. And the time has come, gentlemen, when it is necessary that the benefits of federally financed research, as well as research financed in other ways, be placed in the hands of American businessmen and enterprises. To insure the most effective operation of such a plan as proposed in my bill, it is imperative that it be one which is developed on a State or regional level. This has also been proposed in my bill. The States, through cooperation with their universities, their communities, and their industries can best determine the needs of their industries and how the modern developments in science and technology can most effectively be applied to meet the needs of new and old industries and of large and small industries.

Gentlemen, in the Commonwealth of Massachusetts alone, there are approximately 8,800 small businesses. These are the people who would benefit the most from the workings of this act. These are the people who are too small to maintain their own staffs of technicians and research specialists. Under the provisions of my act they would be able to call upon the assistance of the State or regional institutions for help they now cannot afford because of the size of their operations.

However, I have personally observed the death of many firms in my district and in my State. A textile firm, successful for 50 years, was forced to close its doors. A papermill was also forced to shut down its operations. I believe that if technical help had been available to these firms of the nature envisioned under the provisions of the bill now before you, the story might have been different. The loss to the State and to the community and the families comprising them would have been avoided. I am certain that you have also seen similar closings and similar losses suffered in your districts and in your States.

I, therefore, respectfully urge that the members of this subcommittee report favorably to the full committee on the provisions of my bill. I do not believe that we should delay in providing the type of help which would be made available under the provisions of my bill to those who need it. I am certain that in the years to come this bill shall be looked upon as a major boon to industry and business.

Thank you, gentlemen, in allowing me to express my views on this matter this morning.

THE COMMONWEALTH OF MASSACHUSETTS,
UNIVERSITY OF MASSACHUSETTS,
Amherst, May 27, 1965.

Hon. SILVIO O. CONTE,
House Office Building,
Washington, D.C.

DEAR REPRESENTATIVE CONTE: The State Technical Services Act of 1965 (S. 949 and H.R. 3420) proposed a most significant potential contribution to our urban, industrial society. The University of Massachusetts strongly endorses the bills and hopes that you will support them for the future welfare and prosperity of the Commonwealth.

Briefly, as you know, the proposed act would grant matching funds to make more readily available the latest technologies and discoveries for the benefit of local businesses and industries. Under such an act, the university would work

with other accredited engineering and business schools to form plans where scientific and technological information may be put into the hands of private industry and business in order for them to operate more efficiently.

Through such means, our institutions of higher education can aid in the improvement of the economy of Massachusetts, strengthening employment, growth and prosperity. In the two areas of improving present manufacturing and in new product development, the proposed act can aid our commercial enterprises in a material manner.

Advanced technology makes manufacturing and distribution processes continuously subject to obsolescence. The advent of the stainless steel razor blade is an example wherein a Massachusetts firm, the Gillette Co., had to respond quickly in order to meet the competition. Under the proposed act, our scientists and engineers might assist in providing greater leadtime for our industries in moving to meet such competition.

New product development has become an important factor in economic vitality. Some industries report that from 30 to 50 percent of their current production is in products that were not on the market 20 years ago. Massachusetts industries must be assisted in maintaining their progress in this dynamic area of competition.

Other States have, on a State-supported basis, modest programs similar to that envisaged in this act. New Hampshire, for example, has 10 full-time staff in their engineering experiment station. Georgia has 50 people aiding State industries and has just opened its fifth branch office to provide this type of technical services. Iowa's center has 10 full-time people, and North Carolina has a \$200,000 budget for such purposes.

There are 8,900 industries in Massachusetts, of which 8,800 have less than 1,000 employees and are, therefore, too small to maintain fully their own technical and research service staffs. These bills will provide an impetus to the general court to cooperatively support a program of communication and assistance between campuses and commercial enterprise so that competent technical assistance can be made readily available.

The University of Massachusetts, recognizing the problem, has already committed some funds to the purpose of aiding Massachusetts industries. But this level of assistance must be substantially increased if our service and contribution to business in the State is to have a real impact and widespread constructive result. We would hope for your active support and favorable vote on this legislation.

Sincerely yours,

JOHN W. LEDERLE, *President.*

Mr. HARRIS. Mr. Chairman, I would like to join in welcoming our colleague, Mr. Conte, to these hearings this morning, and to thank him for his interest in this important and visionary program, which also has practical realities included in it. I am very glad to welcome him as one of the sponsors of the supporting legislation.

Mr. CONTE. Thank you, Mr. Chairman.

Mr. MACDONALD. The next witness is our colleague from California, Hon. James C. Corman. Mr. Corman, we will be glad to hear you at this time.

STATEMENT OF HON. JAMES C. CORMAN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

Mr. CORMAN. Mr. Chairman, I appreciate this opportunity to testify in support of the State Technical Services Act.

The State Technical Services Act is landmark legislation which will be of immense value to our entire Nation. But the programs made possible under this bill are of immediate and particular use in those communities in which there are a well-developed industrial enterprise based upon the effective utilization of modern science and technology.

The 22d District of California, which I have the honor to represent, plays a major role in meeting our national commitment in the fields

of space research and exploration as well as in defense. I hope you will pardon my pride in reporting that in the first 8 months of fiscal year 1965, the 22d District has received \$267,632,000 in prime contracts from the National Aeronautics and Space Administration alone. This represents a 12-percent increase over the entire preceding fiscal year. Mr. Chairman, these contracts were earned by the hard work and talent of our creative business leaders and highly skilled engineers and scientists.

This talent and technology must also be put to work to satisfy the expanding needs of civilian production. This is essential for two reasons: both the public and private needs of our economy require the contributions that can be made by systems engineering and scientific discovery. This is the path to full production, full employment, and economic well-being for the United States. Second, those valued citizens who are now engaged in space and defense work must be protected from the erratic rise and fall of Government procurement. We do not advocate the spending of one dollar on Government contracts that is not clearly required by the national interest. We have made that abundantly clear in our opposition to the awarding of contracts as a means of aiding depressed areas. But we must also be sure that the years of experience and knowledge that now supports the space and defense efforts will be constantly engaged in useful and productive work.

The State Technical Services Act is a significant step in assuring the use of that human resource. The act would enable the Federal Government to make grants to States in support of programs to achieve more effective consumer use of science and technology. This would be done through locally planned technical services programs designed specifically to place these findings in the hands of local business. To qualify for the Federal matching funds, a State would designate an institution or agency responsible for preparing and administering technical services programs within the State.

The designated institution would prepare a 5-year plan, outlining the technological and economic situation in the State, the major regional and industrial problems, and the means to be used in assisting in their solution. I might note that the State of California through its Office of Planning and the Economic Development Agency has already undertaken this type of preparation.

The designated institution would also prepare an annual technical services program, covering the objectives for the first year, the budget, and the responsibilities assigned to each qualified institution participating in the program. The 5-year plan and the annual program would be submitted to the Secretary of Commerce for his review.

For example, a technology diffusion program oriented to the needs and problems of a specific industry might offer workshops, seminars, and demonstrations to bring existing technology to local businessmen for their use. A technology dissemination and referral center could offer two types of services: (1) technical reports, abstracts, microfilm, computer tapes, and the like, and (2) referral to sources of scientific and engineering expertise in the fields of interest to the local industry. Such a center would be in continuous interaction with local business and industry, so that its services will be pertinent to the local economy. These examples do not exhaust the limits of possibility which are only bounded by the imagination and initiative of the planning organization.

I am convinced that American private business can continue to provide the goods, services, and the employment required in our free society. Government can and should exert every effort to help private industry do the job. Enactment of the State Technical Services Act will result in more jobs, new products, and a strengthened capacity for the United States to meet its responsibilities to freemen at home and abroad.

Thank you, Mr. Chairman.

Mr. MACDONALD. Are there any questions? If not, we thank you for your testimony, Mr. Corman.

Mr. CORMAN. Thank you for the opportunity, Mr. Chairman.

Mr. MACDONALD. The next witness is our colleague from Iowa, the Honorable John R. Schmidhauser. Mr. Schmidhauser, we welcome you to the committee.

STATEMENT OF HON. JOHN R. SCHMIDHAUSER, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF IOWA

Mr. SCHMIDHAUSER. I want to thank the distinguished chairman and the other members of the committee for providing me with the opportunity to speak on behalf of the State Technical Services Act which I have introduced (H.R. 7501) along with a number of my colleagues. I believe this act would be of tremendous importance to the further development of our economy.

The proposal currently before this committee would enable the Federal Government to make grants to States in support of programs to make better commercial use of the latest findings of science and technology. These programs, planned and carried out locally, would place technical findings in the hands of local business and industry. I believe the services provided—which include identifying new opportunities for applying technology to the advancement of regions and industries, preparing and disseminating scientific or engineering information, and facilitating its use—would help to distribute on a wider and more equitable basis our tremendous reservoir of scientific information and knowledge. The end result would be a strengthened national economy. This goal has long been a primary objective of legislative actions. Most Americans agree that as a nation, we share four major economic goals:

1. To promote our economic growth;
2. To improve our competitive position in world trade;
3. To encourage regional economic growth so that all can share in the benefits of an expanding economy; and
4. To achieve and maintain a high level of employment throughout the Nation.

It is my belief that this bill will facilitate the attainment of these much desired objectives. Although we are in a position to attain these goals, our success depends on a continuing advance, nationwide and industrywide, in our use of the results of modern science and technology. At the present time, however, regions of our country share unequally in our general prosperity. I believe the facts indicate that the economic problems of these regions are closely correlated with a slower rate of industrial growth and industrial use of advanced technology. Even within industries, there is a sharp variation in the level of use of advanced technology. This is the current situation

in spite of the great recent increase in research and development. Furthermore, we have only started to tap the possible benefits to the economy as a whole which can be derived from our expenditures in the fields of defense and space.

President Johnson recognized this problem in his Economic Report of January 1964 in which he said we must accept a " * * * challenge to apply the Nation's growing scientific and engineering resources to new socially profitable uses * * *" and directed the Secretary of Commerce to " * * * join with private business and all universities in speeding the development and spread of new technology."

I believe the Technical Services Act would promote this great goal. The State technical service program proposed in this legislation would apply broadly to all industries, all relevant technologies, and all States and regions. It would work, in each region, with existing local technical information centers and extension programs, and will draw on central technical information facilities for input to its own efforts. The emphasis is on the application of technology to economic problems and the general education extension proposal would broadly support many kinds of educational programs. I believe this is an approach which would add increased support to our 4½-year period of constant economic expansion. Furthermore, it would speed the decline in our unemployment rate because of the increased number of jobs which would be generated.

I also would like to say that it is my belief that from this program will emerge new business, improved processes and products, and new services. Furthermore, this act will help make American products from all areas of the Nation, including those from my congressional district in southeast Iowa, more competitive in the rapidly expanding world markets.

This program also will help fill the urgent need for highly trained people to bridge the gap between what has been discovered in the laboratory and what can be used on the production line. We also need special mechanisms and institutions to translate the results of science into the language of applied technology. This will be accomplished by the State Technical Services Act of 1965.

It is my deep conviction that the solutions to the problems facing our great Nation rest on a set of new concepts of cooperation and on a creative attitude toward the problem-solving process. By cooperative effort, such as that envisaged by this bill, I am confident that we will see our free economy expand for the benefit of all Americans.

In conclusion, I respectfully request the committee to approve this legislation and to favorably report the State Technical Services Act.

Thank you for this opportunity to speak on behalf of this most promising program.

Mr. MACDONALD. Are there any questions? If not, we thank you for your appearance, Mr. Schmidhauser.

Mr. SCHMIDHAUSER. Thank you, Mr. Chairman.

Mr. MACDONALD. The next witness is our colleague from California, the Honorable George E. Brown, Jr. Mr. Brown, we will be glad to hear you at this time.

**STATEMENT OF HON. GEORGE E. BROWN, JR., A REPRESENTATIVE
IN CONGRESS FROM THE STATE OF CALIFORNIA**

MR. BROWN. Mr. Chairman, I have introduced H.R. 8049, which is one of the bills that is before this committee for consideration today, proposing the establishment of a system of State technical service centers.

My purpose in introducing and supporting this proposal is embodied and well stated in the declaration of purpose in the bill, itself, which I know you are familiar with. This declaration of purpose would place Congress on record as believing that "wider diffusion and more effective application of science and technology in industry are essential to the growth of the economy, to higher levels of employment, and to the competitive position of U.S. products in world markets."

It also goes on to state that our research efforts should be placed in the hands of American business and enterprise, and expresses the belief that cooperation between the States, universities, communities, and industries can provide encouragement for "a more effective application of science and technology to both new and established industry."

This proposal would provide a national program of incentives to stimulate this cooperation.

Mr. Chairman, there are many uncoordinated efforts by Federal agencies, by universities, or by industry to obtain this dissemination of the massive store of developments, discoveries, and technical information that we have gained through billions of dollars in research efforts.

I am particularly familiar with the efforts of the National Aeronautics and Space Administration in this regard, through its technology utilization centers, and have hopes of being able to stimulate the placement of one of these centers in southern California. This, of course, would not adequately bring the technology of the Department of Defense or the Atomic Energy Commission, for instance, to southern California at the same time.

Other departments and agencies have technical information services of their own, and I am sure that some are available to southern Californians. A central coordinating institution that could properly combine and evaluate the information from all of these sources would, of course, be invaluable to local business and industry.

There is no NASA Technology Utilization Center west of Oklahoma. The large industries that are most involved in defense contract work seem, for the most part, to be quite self-sufficient in relation to development of their own technological needs. The gap arises insofar as smaller or even new industries might be concerned.

The Federal funds that are spent on research are provided by the people of this Nation, and the people of this Nation are entitled to have the benefits of this research made available in as broad a manner as possible for those who might be able to make use of it. I do not believe there is any disagreement on this point.

The need for increased industrial development and growth is, likewise, unchallenged, and it is my belief that these technical services centers would be a great help in fulfilling this need.

I would like to urge that one admonition be given to the institutions operating under the State Technical Services Act in preparing their plans and in developing means to overcome the problems which this act is designed to meet. This would be an expression by the committee that the interests of small business should be kept constantly in mind.

Those who are most in need of this type of assistance and who would be most likely to utilize new and novel developments are our small businessmen. They are less captured by the rigidity that so often enmeshes many of our larger corporations. In addition, the small business is much less able to conduct its own research and development operation. The large corporation, on the other hand, is not only capable, but does rely on its own resources for new developments since it can control the direction of the research.

I would strongly urge the committee to recommend passage of the State Technical Services Act of 1965. Thank you.

Mr. MACDONALD. We appreciate your appearance and testimony, Mr. Brown.

Mr. BROWN. Thank you, Mr. Chairman.

Mr. MACDONALD. I would like to welcome here and recognize the Honorable John T. Connor, Secretary of the Department of Commerce, and say to the Secretary that it is a great pleasure to have you here. This is to my knowledge the first time you have appeared before the Subcommittee on Commerce and Finance, and I personally am looking forward to seeing you many times and I hope for many, many years.

Welcome to the committee.

STATEMENT OF HON. JOHN T. CONNOR, SECRETARY OF COMMERCE, ACCOMPANIED BY J. HERBERT HOLLOMON, ASSISTANT SECRETARY FOR SCIENCE AND TECHNOLOGY; AND ROBERT E. GILES, GENERAL COUNSEL

Secretary CONNOR. Thank you very much, Mr. Chairman.

Mr. HARRIS. I share the sentiments of our distinguished colleague, chairman of this subcommittee, Mr. Macdonald, in extending a warm welcome to the distinguished Secretary who is appearing before this committee. He was here last week before another subcommittee of this committee. As the chairman indicated so well a moment ago, I think we will have him coming back from time to time. We look forward to it with pleasure on each occasion.

Apparently this warmth expressed by the chairman to the distinguished Secretary of Commerce must be reminiscent of some of the New England background and inheritance. Perhaps if there is as much to Cape Cod as mentioned a moment ago, the subcommittee might do well to see what it is like sometime.

Mr. MACDONALD. I think that is a wonderful idea.

Secretary CONNOR. Thank you, Chairman Harris.

Mr. Chairman, members of the subcommittee, in addition to Dr. Hollomon, Assistant Secretary for Science and Technology, I also have with me Mr. Robert Giles, General Counsel of the Department of Commerce.

I appreciate the opportunity to appear before you this morning in support of H.R. 3420, the proposed State Technical Services Act of 1965.

The proposed legislation would authorize Federal grants to the States under a cooperative program to spread the findings of science and technology throughout American business and enterprise. Its purpose is to speed industrial and economic growth of the States and the country generally through a better application of our technical and scientific knowledge.

Merely having knowledge in existence—in the possession of a relatively few experts—is not enough. Our scientific and technical know-how, which is constantly expanding and improving should be communicated to, and made available to, business firms throughout the Nation. This must be done if the American economy is to realize its full potential from science and technology.

We believe that this bill, if enacted, will help to increase the industrial strength of the entire country, including those areas which are now economically weak. It will stimulate an increase in technical manpower and employment opportunities. It will enhance our competitive position in world markets. It will stimulate creation of new businesses and industries.

This bill is in response to President Johnson's direction to the Department of Commerce. In his Economic Report of 1964, the President said:

The Federal Government should join with private business and our universities in speeding the development and spread of new technology. I have directed the Department of Commerce to explore new ways to accomplish this.

This bill will accomplish what the President asked to be done. The program which we propose would work in the following way: To qualify for Federal matching funds, a State would name an institution or agency to prepare and administer a technical services plan and program for that State. We have called the institution or agency responsible for planning and administering the State program the designated institution. It could be a State university or a State agency. Two or more States could also join in a cooperative program and name a regional institution.

The first task for the designated institution would be to prepare a long-term plan covering a 5-year period outlining the technological and economic prospects in the State, the major regional industrial problems faced and the ways and means a program can help solve them. The amount of \$25,000 a year in Federal funds for the first 3 years, on a nonmatching basis, could be made available to the State to help prepare the first plan and the initial annual program. The State or regional programs would be planned with the advice of broadly based advisory committees reflecting the local or regional interests. All qualified institutions in the State would be invited to participate in the planning.

The bill defines "qualified institution" as institutions of higher learning which have accredited programs in engineering or business administration and those which are competent nonprofit organizations and State agencies. These would all be invited to participate. The State's technical services program would outline a budget and assign

responsibilities to each qualified institution which participates in the program.

After the planning is completed, the designated institution would submit the 5-year plan and the annual program to the Secretary of Commerce through the Governor of the State. The Governor would certify that the plan and program had been developed under procedures and guidelines set out in the bill, which would include proper coordination, adequate rules to avoid conflicts of interest, assurance of non-Federal matching funds, and care in avoiding special treatment to particular firms.

Federal funds would be paid to support approved programs meeting the legal requirements and the purposes of the bill. The grants could be as much as one-half of the amount of the State program, with the remainder coming from State or non-Federal sources. However, maximum amounts paid to the States would be fixed by regulations, taking into account population, industrial and economic development, and productive efficiency and technical resources. This kind of flexibility is necessary to respond to the needs of the States and to encourage imaginative and creative local programs. No State could receive more than its limit, but could get less depending on the merit of its proposals. Regional programs could be allotted an extra 10 percent of the amount approved for payment to the participating States.

Up to 20 percent of the Department's appropriation for this activity could be used to make direct payments on a matching basis for programs that have special merit or are truly national in scope.

A State's long-term plan could, of course, be revised periodically and new plans would be drawn up at 5-year intervals. The annual programs implement the long-term plan; but they must be submitted each year to qualify for annual funds. In administering the bill we would establish a small administrative unit responsible to the Assistant Secretary for Science and Technology. We would, of course, consult and coordinate this work with other Federal agencies, as appropriate. After each 5-year period, a public committee would evaluate the impact of the legislation and make any recommendations necessary to improve it; or possibly to terminate it, if the States by that time are successful enough in stimulating resources to carry the program on their own.

I have described how the legislation would work. For what it would accomplish we might first look to the major imbalances that exist in the use of advanced technology. These imbalances occur among regions of the country and among firms within major industries. Also our large expenditures for national defense and space exploration, while justified for their direct ends, are limited in the extent to which they contribute to the productivity of the rest of our economy. Some industries are unable to adapt to new technology. Other companies within very prosperous industries do not take advantage of the latest technology available, perhaps because they have no way of finding out what it is.

The imbalances, the dislocations and the differences between the healthy and the unhealthy industries create conditions which can result in serious national problems. The regions of the country which are economically most successful and the companies and the industries that have thrived did not achieve their healthy position

only by discovering new knowledge in a laboratory—they achieved it by actually putting new or advanced technology to work in their own plants.

The proposed legislation would not support scientific research or industrial research, nor would it be concerned with developing proprietary products or processes. Its purpose is to promote wider use of the results of research. There is a wide variety of technical services that can be offered to serve this purpose. These would specifically be drawn up by the State or region to meet the needs of the region or of the industry within the State or region. We think better results will occur in the regions and industries through this local initiative rather than by Federal direction.

For example, a principal industry of a State or region might benefit from demonstration models of the latest technology pertinent to the area or from practical workshops or seminars designed to upgrade the training of businessmen and their key skilled technicians. Or possibly a program should stress a new advance in technology affecting a large number of industries or businesses in the State or region. For example, seminars and demonstrations on new metal welding techniques would be useful to such local business interests as automotive mechanics, wrought iron furniture manufacturers, household appliance manufacturers, and construction engineers, as well as others.

Another service which could stimulate a more efficient use of technical data might function through a technical data and referral center in a State. This center could make available technical reports, abstracts, bibliographies, computer tapes, and other data of particular importance to business throughout the State. Equally important it could refer businessmen to experts and consultants whom they could retain. Technology can also help in business management, as well as in engineering and production. For example, a program to introduce managers to the uses of computers in planning better market surveys or for planning their supply or distribution operations would be a very valuable service.

Having shown how the program works and what it might accomplish, let me turn to some revealing facts to show why we need it.

Regarding our balance of trade, it seems clear that with the highest paid labor force in the world, American products having a high labor content are increasingly at a competitive disadvantage. Imports are successfully competing in our domestic markets, even in high technology products such as machine tools, scientific instruments, office and computing machines, motors and generators, railway equipment and aircraft. In 1963, the manufactured machinery which was exported from the United States to the European market averaged 50 percent higher in productivity than machinery installed domestically. This means that European plants are in the process of becoming more productive than our own. One of the most effective steps we can take to reverse this trend is to stimulate innovation and technological improvement in our own manufacturing enterprises. Spreading technology through programs possible under the bill would thus help our position in world trade.

In the free enterprise system we always assume that inefficient producers quickly lose their share of the market and go out of business. Many believe that new techniques which improve productivity swiftly move through an industry, almost automatically. We find,

however, that is is not necessarily so. There is a tremendous spread in productivity between the most productive firms and the least productive firms in some industries which we have studied. (I mentioned this imbalance earlier.) In the machine toolbuilding industry, for example, the most recent data available indicates that 8 manufacturers out of 100 averaged \$18.90 in dollar value added to their product for each man-hour of labor; 28 of the 100 averaged less than \$5. This means that a few modern plants are highly productive but a large fraction of establishments are using obsolete techniques which reduce their competitive position, particularly in world markets. The same pattern exists in other selected industries and we have reason to believe that it exists in nearly every other industry over 20 years old.

Technological improvement is a very complex process. It does not occur readily. It is made more difficult by the risks inherent in innovation. It is also costly, particularly since the cost of basic research and development is rising more rapidly than the price of manufactured goods. In a modern industrial nation such as ours, technical activity and economic well-being seem to go hand in hand. With the results of so much expensive research being inefficiently used throughout the country, it is easy to see why imbalances have developed and why there is now a national need for a program to spread the results of science and technology to all regions, industries, and businesses.

We might ask why the proposed legislation seems to call on universities to perform this function of disseminating technology. We feel that knowledge about the results of research and teaching skills are both essential to effective technical services programs. More often these skills are found at the universities throughout the country. Through engineering schools, the universities are major sources of scientific and technical knowledge. Many universities have demonstrated their ability to stimulate new technology in activities such as their agricultural extension programs. Certainly, the States which now have successful economic development programs regard university participation as being highly desirable for success. But we do not take the position that universities are the only technical resource which could be used in State programs. Other institutions such as nonprofit, technically oriented institutions, foundations, as well as appropriate State agencies, are all excellent resources for carrying out the programs.

In conclusion, Mr. Chairman, the State Technical Services Act, if enacted, will permit some important steps to be taken to place the results of costly research and development into the hands of those who will benefit. It would significantly aid in spreading technology for the public good. I have explained how it will work, what it could accomplish and why it is desirable and needed. In contributing to our economic growth, to an increase in job opportunities, and to an improvement in our international competitive position, the programs under the legislation would be well worth their cost.

I strongly urge this committee to act favorably on this bill.

Mr. MACDONALD. Thank you, Mr. Secretary.

As you say, and you have explained in some measure how the plan would work, and what it would accomplish and why it is desirable and needed, to use your words. One question did come to my mind

as you made your statement and while I don't mean to sound like the distinguished gentleman from Iowa, one of our colleagues, I was wondering how much this program would cost if it were adopted, that is, the cost to the Federal Government.

Secretary CONNOR. Mr. Chairman, we have estimated that the cost in the first year will be about \$9 million to get the program started. We have estimated that over the 5-year period for which this initial planning would be contemplated, the cost would be approximately \$140 million.

Mr. MACDONALD. Do you have any breakdown of how those costs would be allocated to the various sections of the Department or where the money would go?

Secretary CONNOR. No, sir. We don't have a breakdown on a State-by-State basis which would be meaningful. As I have indicated in the testimony, we would work out a formula which has not been completed yet which would establish a minimum amount which would go to each of the 50 States and then a maximum worked out on a basis such as population. But this has not been completed yet.

Mr. MACDONALD. Well, as I understand it, obviously it would be a voluntary program on the part of the 50 States.

Secretary CONNOR. Yes, sir; that is right. Each State would have to take the initiative in order to qualify for participation in the program on a matching basis. The Federal Government would contribute no more than 50 percent of total cost of an approved plan.

Mr. MACDONALD. Then I would take it you would be really hard put to find out how much it would cost unless you knew how many States are going to participate.

Secretary CONNOR. That is right. We can only make some rough estimates at the present time based upon our understanding of the amount of interest in the States and their ability to respond to the availability of such a program within the first few years after passage of the bill.

Mr. MACDONALD. Right. Has the Department put out any tentative feelers or asked for expression of opinions from the various States, the departments of commerce of the various States, as to what degree they would be interested in such a plan?

Secretary CONNOR. Mr. Chairman, Dr. Hollomon has had several meetings with respect to the need for such a program and this legislative proposal has engendered a considerable amount of interest. I think it might be interesting to the committee if Dr. Hollomon would give some description of those meetings and what responses have been obtained.

Mr. MACDONALD. I am sure the committee would be glad to hear them.

Dr. HOLLOWON. Thank you, Mr. Chairman. My name is J. Herbert Hollomon. I am Assistant Secretary of Commerce.

We have had a number of meetings with representatives of each of the States who are responsible for economic development activities in the States, with business groups, and with professional groups of various kinds. We wrote, on a number of occasions, to the Governor of each State asking for his comments upon the bill and how it might be administered.

Our present guess is that approximately 30 to 35 States would be in a position to begin some activity under the bill within the first year.

This would be modest in some States and more dramatic in others. There are six or seven States in which fairly active programs of this type are now underway. They have the manpower; they have people who have been doing some planning. There are a number of States that have introduced proposed legislation into their own legislative bodies, in anticipation of this bill, giving authority to the Governor or to a certain State agency to provide for the matching funds.

Mr. MACDONALD. If I could ask at that point, how many States have done this, do you know?

Dr. HOLLOMON. I know of at least two that have done that. So, to answer your question directly, I would think that something of the order of 30 States could participate within the first year, but not to their maximum capabilities. The bill calls for a nonmatching payment of \$25,000 a year to each State for a 3-year period to provide the State with funds to start planning its program.

Mr. MACDONALD. Maybe I didn't follow the testimony closely enough, although it is a fine statement and I tried to follow it as closely as possible, but what would be the relationship between the universities in the various States and the State governments themselves?

Dr. HOLLOMON. The present plan calls for the institutions that would actually carry out the plan to be generally colleges and universities which offer, as a minimum, a qualified engineering degree or qualified degree in business administration. The purpose of the State agency is to bring together the institutions in the State, which I have just mentioned, and decide what each one wishes to do in terms of the industry of the local area of their institution.

It is the intention of the bill that the technical services provided under the bill would be carried out principally by the State's technical universities and colleges. The purpose of the State institution is to bring together the plan for the whole State.

Mr. MACDONALD. Well, for a concrete example, I don't mean to sound parochial, but in Massachusetts, with which I am familiar, we have Harvard, Northeastern, Massachusetts Institute of Technology, and perhaps others——

Dr. HOLLOMON. University of Massachusetts.

Mr. MACDONALD (continuing). And I take it that the State's function would be to sit down with representatives of each one of the institutions that I have mentioned, perhaps others, and ask them what sort of plan they have or ask them for a consensus of what a plan should be. Is that it?

Dr. HOLLOMON. The Governor——

Mr. MACDONALD. Or each university and——

Dr. HOLLOMON. The Governor of the State would designate one institution in the State to be responsible for making the plan. That institution would have submitted to it the specific programs for all of the various institutions that you just mentioned.

The purpose of having only one agency do the planning is to assure that if MIT wishes to do something in a certain area of the State, it isn't identical to what the University of Massachusetts would do, or is not identical to what some other institution in the State would do.

The second purpose of having the designated institution is to find out what the problems of the State are.

Mr. MACDONALD. Wouldn't that cause friction perhaps between the various institutions? As a concrete example, at the Boston City Hospital—once again I hope I am not sounding parochial, but one illustration will go to the general thought I have in mind—at the Boston City Hospital, Harvard, Boston University, and Tufts Medical School all use that hospital for training their students and they are in the midst right now of a headline type of hassle as to who should run the hospital. And I was wondering if just designating one institution out of, say, five, wouldn't lead to some controversy?

Dr. HOLLOMON. This was recognized in the various correspondence we have had and in our discussions with many people. The bill, therefore, says that the State may designate as the planning agency either a land-grant college, a State university, or a State agency, either one or the other, for making the central plan for the State.

Mr. MACDONALD. In that case that would take away the nationally recognized leader—Massachusetts Institute of Technology—and give it to the University of Massachusetts which is the only land-grant college.

Dr. HOLLOMON. No, sir. I went to MIT. I will be parochial, too, if I may. It is a land-grant college, too. MIT strangely enough is a land-grant college in the State of Massachusetts.

Mr. MACDONALD. You learn something every day.

Dr. HOLLOMON. I did, too. I didn't know it until after I had been graduated for 20 years.

Mr. MACDONALD. Now, to take it down to just two institutions, however——

Dr. HOLLOMON. For the designated agency, that is correct, sir.

Secretary CONNOR. But, Mr. Chairman, in a particular State where the Governor has the kind of problem you indicated, if he so desires and if there is a State agency such as an agency for economic development or an outstanding organization that has emphasized technical activities, he could designate one or the other of those. So the Governor will have a great deal of flexibility. But in the instance where he departs from the land-grant college or the State university, then there has to be some kind of an objective justification for doing so.

Mr. MACDONALD. The matching funds from the Federal Government go only to the designated institution, is that right?

Dr. HOLLOMON. Matching funds go, through the designated institution, to whichever qualified institutions carry out the programs.

Mr. MACDONALD. All participating institutions.

Dr. HOLLOMON. Yes, sir.

Mr. MACDONALD. Mr. Springer?

Mr. SPRINGER. Mr. Secretary, you may have answered this, but I want to be sure. How much do you estimate the program to cost for each 1 of the first 3 years.

Secretary CONNOR. The first year's estimated cost, Congressman Springer, is \$9 million and for the 5-year period that we are talking about here, the estimated cost would be \$140 million, assuming participation by the States in accordance with some assumptions we have had to make. That is the maximum cost, sir.

Mr. SPRINGER. In the neighborhood of about \$28 million a year average for a 5-year period; that is correct?

Secretary CONNOR. It is hard to give an average because this will be an accelerating program. But we estimate that the maximum cost once it gets underway is \$40 million a year.

Mr. SPRINGER. Right now do you expect this to be a continuing program?

Secretary CONNOR. We would hope so, sir; but we recognize that Congress will want to take a look at it from time to time. Our suggestion is that the authorization in this bill be subject to review by Congress at the end of a 6-year period so that the 5-year plan that is contemplated in the bill for each State could get underway. We also suggest that there be a review by the kind of national advisory committee that is contemplated in the bill and that its findings be available to the Congress to determine whether or not the whole program should be continued.

Mr. SPRINGER. Mr. Secretary, what would the program cost for the first 3 years?

Secretary CONNOR. Our estimate is \$9 million the first year, it it accelerates into the order of magnitude of \$15 to \$20 million, as I remember it, the second year, and then in the order of \$20 to \$25 million in the third year.

Mr. SPRINGER. \$9 million approximately the first year, \$20 million the second year, and approximately \$25 million the third year?

Secretary CONNOR. \$25 to \$30 million.

Mr. SPRINGER. Then \$9 million the first year, \$20 million the second year, and \$30 million the third year, is that about right?

Secretary CONNOR. I would like Dr. Hollomon to give a few—

Mr. SPRINGER. Let's have him. This is his brainchild. He has talked to me about it.

Dr. HOLLOMON. Not entirely my brainchild, sir. The numbers the Secretary has given you presume that all the States would participate in the program to the full amount. We made estimates on the basis of each State participating in the program fully, so these would be maximum amounts. The approximate amounts which the Secretary has given you, are \$8 or \$9 million the first year, \$20 million the second year, \$30 million the third year, going up to the full authorized program at the end of the fourth- and fifth-year period.

Mr. SPRINGER. All right. Mr. Hollomon, since you are talking on this, I think you are the expert. How many centers do you anticipate in each State?

Dr. HOLLOMON. Mr. Springer, there are approximately 200 institutions in the United States that give bachelors degrees in engineering that are accredited at the present time and an additional 25 or so that don't give engineering degrees but give the bachelors degree in business administration. So, not counting the few institutions, the qualified nonprofit institutions and State agencies that might be included in the bill, the total that could possibly participate are of the order of 200. It would be my guess that even with the full implementation of the bill, no more than half of those would actually be involved.

Mr. SPRINGER. You are thinking in terms of approximately a hundred institutions?

Dr. HOLLOMON. Yes, sir; of that order.

Mr. SPRINGER. All right. Now, how many State agencies—I understand they also qualify, is that correct?

Dr. HOLLOMON. The qualified institutions are institutions that either give a degree in business administration or in engineering, or nonprofit institutions with certain qualifications. The State agencies

in this case are the agencies that could make the plan for the State but would not necessarily participate.

Mr. SPRINGER. Would they share in the funds?

Dr. HOLLOMON. Not if they do not meet the criteria which I just stated.

Mr. SPRINGER. But they are eligible for funds, State agencies, if they qualify?

Dr. HOLLOMON. Yes, sir.

Mr. SPRINGER. And it is possible that they could qualify and not a public institution, is that correct?

Dr. HOLLOMON. Would you clarify the question?

Mr. SPRINGER. It is possible that the State agency would act instead of an institution in some States; is that correct?

Dr. HOLLOMON. To do the planning, yes sir.

Mr. SPRINGER. To do the planning only?

Dr. HOLLOMON. Yes, sir. Only to do the planning.

Mr. SPRINGER. But as far as the actual gathering of the research and being the center for it, that would be in the nature of a State university.

Dr. HOLLOMON. Not necessarily a State university—any institution that gives a degree in engineering, business administration, or certain nonprofit research and development institutions.

Mr. SPRINGER. The center then would be a university?

Dr. HOLLOMON. You can almost say that unqualifiedly.

Mr. SPRINGER. Now, you anticipate that there would be approximately 100?

Dr. HOLLOMON. Yes, sir.

Mr. SPRINGER. Would there be any State that you know of at this moment which could not qualify?

Dr. HOLLOMON. No, sir.

Mr. SPRINGER. Is it your belief that everyone of the 50 States could qualify?

Dr. HOLLOMON. Yes, sir; if they did the necessary planning and took some initiative.

Mr. SPRINGER. Is it your thought, Mr. Hollomon, this would be a permanent agency of the Department of Commerce?

Dr. HOLLOMON. Mr. Springer, we have tried to, as the Secretary indicated, place in the bill the requirement that the program be reviewed at the end of a 5-year period to see how and under what conditions it is successful. It is my personal feeling that, in time, the initiative for a program of this kind should increasingly fall upon the States and industry. My own view is that we ought to take a look at the problem at the end of the 5-year period. Some States will have difficulty getting started with a full 5-year plan by the very nature of things. I think it depends very much on the degree to which the individual States and universities take the initiative and make plans.

Mr. SPRINGER. Now, is it your thought to gather industrial and technological research for industries and business? Am I stating this correctly?

Dr. HOLLOMON. To gather the information that is available about it, but not the research itself. That is correct.

Mr. SPRINGER. Would you keep a category index of research?

Dr. HOLLOMON. We would not do that but I think that is one of the important things that might develop in a State plan—to know exactly what research is going on in the field that they select and provide that information to industry.

Mr. SPRINGER. Now, is this agency—we will say that it is X University in Iowa—will they gather research and data only within the State of Iowa?

Dr. HOLLOMON. No, sir. Pertinent information from the whole country would be gathered.

Mr. SPRINGER. They will gather research——

Dr. HOLLOMON. Information.

Mr. SPRINGER. Information?

Dr. HOLLOMON. Right.

Mr. SPRINGER. Wherever it may be that they think is useful in Iowa.

Dr. HOLLOMON. That is correct, sir.

Mr. SPRINGER. Now, is there any central location, either in existence now or you plan to put in existence, which will be a central agency for all of this information?

Dr. HOLLOMON. Yes, sir. The bill calls for the establishment of a referral center in the Department of Commerce so that the information collected by Iowa, to follow your example, concerning a particular industry, can be put together and made available to Massachusetts or Maine so that there is no duplication of the information that is collected in the States. Other States and other universities could, of course, call upon that central referral center. I believe this is one of the most important aspects of the bill. It will provide for such a central referral center.

Mr. SPRINGER. Is there at the present time any either private or public agency trying to put this together in one central agency.

Dr. HOLLOMON. No, sir. Not to my knowledge.

Mr. SPRINGER. You are sure of this?

Dr. HOLLOMON. Not to my knowledge. I am as sure as I can be.

Mr. SPRINGER. May I say as an example, why I am bringing this to your attention, the Subcommittee on Health and Science which is a tremendous field in research——

Dr. HOLLOMON. Yes, sir.

Mr. SPRINGER (continuing). Last week opened this up. We found out that—well, I believe it was the Bureau of Medicine, and I think this is in NIH——

Dr. HOLLOMON. Yes, sir.

Mr. SPRINGER. They have now started a computer system and it was my understanding that this computer system now computes all of the articles on research in medicine, in any way, each month and that apparently—and this is only by title—this is not the article nor the substance of this—just the title and maybe three or four lines telling about it—that this computer system is the only way they can do it and that at the end of each month this compiles, I forget how many volumes per month. Now, is this what you have in mind?

Dr. HOLLOMON. No, sir. The primary problem is to determine what the needs of the local industry are and to provide information, not necessarily coming from research but coming from technical activities of any sort, to make the industries of the region knowledgeable about the resources that are available. Let's take a similar

example, although not in the medical field. In the Department of Commerce there is a thing called the Clearinghouse for Federal Scientific and Technical Information that puts out computer tape reports and abstracts for all of the reports that come out of the Federal Government's large research and development program, other than medicine.

This information is not generally readily available to small industries or large industries, throughout the whole of the country. One of the things that this program would do would be to make that information available to the universities and they would, in turn, provide it in a useful form to local industry. That is one of the purposes of the bill.

But that is only information developed in the federally supported research and development programs.

Mr. SPRINGER. Now, will this program in its category do that which is in writing or will there be a field group to visit the factories and industries to find out what they are doing?

Dr. HOLLOMON. There could be a field group. Each State would do what it feels is most effective. This is not going to be mandated by the department or by the Federal Government. In the case of the small program that is underway in Georgia, they have a field group which goes out and provides talks, seminars and information to the industry in the State of Georgia. In the State of Iowa, which has a program under way, they have a central information service of the kind you described—not to collect all the information but only the information they believe is most pertinent to Iowa industry.

So there are two different examples of programs.

Mr. SPRINGER. So this would be two examples of what would be done.

Dr. HOLLOMON. That is what might be done if the State felt it was important.

Mr. SPRINGER. Now, would it be in order for an industry to come to the central agency, whatever it may be, in the State of Iowa, and to seek information about their own particular industry? Is that right?

Dr. HOLLOMON. Yes, sir.

Mr. SPRINGER. Is there anything in the nature of this program which goes out and advise communities on how they may get industries, or anything like that?

Dr. HOLLOMON. Only in the sense that the program calls for doing technical and economic studies, if these are believed to be important to the State. This may be valuable to bringing new industry. If a State has particular opportunities for new products and services or particular resources, then this program would permit the dissemination of that technical information to potential new industries.

Secretary CONNOR. Excuse me. Just following that up, Congressman Springer, I think the actual promotion of the State to industry elsewhere in order to attract that industry to the State would have to be done through the State resources other than those provided in the bill. This bill would have nothing to do with the promotion of the State.

Mr. SPRINGER. Do you seek to advise a local community of what will fit their own—

Dr. HOLLOMON. Only from a technical point of view. For example, what sort of technical opportunities there are in the State?

Mr. SPRINGER. We will say Des Moines, some small town near Des Moines, asks for a survey by this agency. Do you go out and make a field survey, at Lawrenceville, Kans., we will say, to determine what would fit that community? Is that a part of this program?

Dr. HOLLOMON. I think this program could carry out special technical studies of that sort; yes sir.

Secretary CONNOR. But it would have to be a part of the State plan. It wouldn't be ordained from Washington.

Mr. SPRINGER. Does the State as a part of this aid the overall plan?

Dr. HOLLOMON. Yes, sir.

Mr. SPRINGER. Could you give me an example of what that overall plan may be?

Dr. HOLLOMON. The overall plan would consist first, as indicated in the bill, of some analysis of the kind of industries in the State and the kind of technical problems that the State has. It would indicate how each of the qualified institutions of the State would participate, what kind of programs each university would have, and how it would insure that they don't overlap; that is, three institutions doing the identical thing within the State. It would indicate that the State has sought either State funds or industrial funds as its matching part of the program, that is has set up an advisory committee for the State program with industrial as well as university representatives and it would indicate how they are going to measure the success of the program. That is the kind of State planning in general terms that would be submitted.

Mr. SPRINGER. They don't set up a plan to determine that southern Iowa would fit this and middle Iowa would fit this and northern Iowa would fit that.

Dr. HOLLOMON. No: I would not think so in that detail.

Mr. SPRINGER. That is all, Mr. Chairman.

Mr. MACDONALD. Mr. Harris.

Mr. HARRIS. I will defer to the other members of the committee at this time, Mr. Chairman.

Mr. MACDONALD. Mr. Huot?

Mr. HUOT. Nothing at this time.

Mr. MACDONALD. Mr. Farnsley.

Mr. FARNSLEY. Doctor, I went to the University of Louisville which got its land grant from the Commonwealth of Kentucky in 1798. I think we had better stick together or the Federal land grant schools will take over. They are coming fast.

I think your program is wonderful. Unlike most things the Federal Government does, instead of doing harm I think it will do good. I think the people will think you are spending money. In this case it isn't spending money but investing money because this money will come bouncing back many times over in increasing tax revenues. I can't see anything wrong with it.

There is another way to spend money to make money. This committee set up an international travel bureau, the U.S. Travel Bureau. From my information from my experts back home, overseas governments and airlines and steamship lines spend four times as much to lure our people to their countries as we spend to lure them to our country and to nobody's surprise, they get four times as many tourists who spend four times as much money and that knocks the whole thing out of balance.

Ten percent of the money overseas visitors spend goes directly to the Federal Government for taxes, so that if we plow back half of what they spent last year we would be spending maybe \$15 or \$20 million bringing them in whereas we are now spending 3 or 2.

And in 2 or 3 years the balance of payments would be balanced.

Have you had a chance to look into this question or is this under your purview, Mr. Secretary?

Secretary CONNOR. Yes, Congressman Farnsley. The U.S. Travel Service is within the Department of Commerce. We did ask for an increased appropriation this year but it was turned down. I would hope that next year at appropriations time we will have such a strong case that we will be able to get the support for a larger appropriation from the appropriate subcommittee of the Appropriations Committee.

The travel program in my opinion is extremely important. The U.S. Travel Service has authorization for programs designed to bring foreign visitors to this country. I think this is extremely important now because of our balance-of-payments deficit. This could help considerably in that. It would also help because of the income generating activities that would be stimulated by these foreign visitors. So we are emphasizing it.

We plan to give it even more emphasis in the future.

Mr. FARNSLEY. Thank you, Mr. Secretary. Good luck.

Secretary CONNOR. Thank you.

Mr. FARNSLEY. It is important.

That is all.

Mr. MACDONALD. Mr. Springer?

Mr. SPRINGER. Mr. Secretary, will the effect of this program be to consolidate the efforts of other agencies of the Federal Government in this field?

Secretary CONNOR. Congressman Springer, at the moment no other agency of Government is performing this kind of a function. We think that by moving now, this program will make it unnecessary for other programs to get into the field and it will stimulate within each State the centralization of this kind of planning and program making. I don't think we could say that it will eliminate anything that is now going on, but looking down the road 20 or 30 years, it will be an economical and efficient way of doing this.

Mr. SPRINGER. Now, according to my information, NASA is spending about \$5 million a year, this year, to get its information out to industry. AEC has some money also, as does the Department of Defense, Health, Education, and Welfare I know; and Agriculture rather a considerable amount.

Secretary CONNOR. That is right. Those programs are designed to encourage the use of the information, particularly technical information, that comes from those programs. They are promoting the use of that kind of information to get a side benefit from the conduct of the work itself.

Mr. SPRINGER. Well, now, do you visualize that your agency is going to combine any of this?

Secretary CONNOR. We will make use, Mr. Springer, of the information that is available from those programs but the emphasis in our program is at the other end of the spectrum.

Our program contemplates that within each State, the people responsible in that State will look at the needs of the State and draw up a plan which can be submitted and approved. Then as that plan goes forward for implementation, the technical information that comes out of the NASA program and the others you have mentioned can be funneled into that State to the extent that it fits in with their program and the information is needed. But the information used in that State will not be limited, by any means, to what emerges from those specific Government programs.

Mr. SPRINGER. Do you visualize that the information that these five agencies that I have named—that you are going to pick up that information in your central agency here in Washington; is that right?

Secretary CONNOR. Yes; very definitely. That information will be available, but it may have no relationship whatsoever to the needs of a particular State. That State may need technical information from completely different fields in which none of those five agencies play any role.

Mr. SPRINGER. Thank you, Mr. Chairman.

Mr. MACDONALD. Mr. Harris.

Mr. HARRIS. Mr. Secretary, I want to thank you for your presentation here today, and for your very frank and candid discussion of the problem. I am somewhat sympathetic to this. I think you have a program that could contribute a great deal to technological developments. We have long since come to the point where in all parts of our Nation this information has to be made available. We must strive for a balanced economy in our expanding economy, expanding Nation, expanding population, and expanding methods of transportation and communication. As to the latter, other phases of our development in this country have not kept pace with communications and transportation. If I have any criticism, which I must say in all frankness, to your proposal here, it is the lack of a positive approach. It seems to me the program that you have presented here is so general, as was indicated by the chairman of the subcommittee at the outset, that I am fearful as it goes on this could take off in an entirely different direction from what you have outlined. Here as I look into it, I think you have a program that is not duplicated in any way regardless of the innumerable and vast research programs that we have. Is there any other program in any field where there is a required cooperative program of States?

Secretary CONNOR. No, Mr. Chairman. This is a new approach. By looking to the State for a study of its industry deficiencies and the opportunities within that State, we are taking a completely different tack from what has been done before.

Mr. HARRIS. Well, it has appeal to me because of its broad application. One of the criticisms I have of NASA as an example, or AEC, you can take any of these scientific programs we have, they seem to just fit into certain sections of the country, and we have experienced in the past during the days of our military program, meaning our defense program and so forth, there were general applications of this development all over the country. You saw it in Illinois, you saw it in Massachusetts, in New York, in California, some in Arkansas, in Missouri, all other the country. It was sort of a thing that reached out to meet the national needs.

Now we have these programs of large, vast, and important research programs, that seem to fit Florida or Houston or California, and we are seeing all of the development pulling our population into these particular areas. In my judgment it is going to cause difficulty one of these days. It is going to make it necessary to meet the problems that are going to those particular sections.

Now, obviously they are getting the benefit out of it. There is a little trickle here and yonder. There is a little AEC project I think with various private companies in northwest Arkansas in cooperation with the University of Arkansas, but it isn't anything like a program to provide the immediate benefits that are being derived by the immense resources of this Nation out of each other. So that from that standpoint this certainly does appeal to me. I observed in section 5 you provide that the Secretary shall not accept a 5-year plan—I want to ask you something about that in a minute, Mr. Springer has but I want to develop it a little further—for review and approval under this act unless the Governor of the State or his designee determines and certifies that the plan is consistent with the State policies and objectives.

Now, it seems to me that puts the responsibilities right back down in the State and if a given State says we do not want to keep up with the rest of the country, that is our decision. But if we want to in our competitive system try to maintain a balance and keep up, and we have a far-looking Governor who wants to do something for his State, he has an opportunity in cooperation with the institutions of the State, it seems to me there are great possibilities that could come from this.

But I do have some problem with your approach here where you say an institution may be designated to do this planning, or an agency as the case may be.

It would seem to me if it is really going to be the kind of a program that you set out here, if it is provided that this planning program would be through a State agency and not an agency or an institution, as the case may be, then one or all the institutions who desire in that State could, with the cooperation of the agency set up or designated by the Governor to plan this program, give a better balanced program and we would avoid the things that Mr. Macdonald mentioned a while ago.

I mentioned that for your consideration because I feel that you could in this way have something positive that the State will work toward. They will set up a program for the planning. We did that in the hospitalization program. It worked very well. We did it in the mental health and retardation program which is coming along now very well. There is a definite responsibility and they don't have the bickering back and forth of this or that institution trying to get the advantage within the State, by arguing "let everything be channeled through me."

Then if the agency with the cooperation of one or more institutions develops its plan, which you provide here, and submits it to you for your consideration, that plan will say that the University of Arkansas is in a position to do so and so or MIT is in a position to do so and so and the University of Illinois, Northwestern University, whatever the case might be, then you would have it before you and

here this State will say through this planned program we are in a position to cooperate in trying to carry it out, and it seems to me that with that kind of approach you might have a more positive approach to a final solution to the problem.

Secretary CONNOR. Well, Chairman Harris, as you know, the facts vary widely from one State to another. There is enough flexibility in the language of the bill so that the Governor of the State, looking at the factual situation in his State, could make that designation if he has an appropriate State economic development agency or some similar agency. On the other hand, if he has a concentration of people in a State university or a land-grant college, who are particularly interested in this kind of economic development, then he could designate such an institution. So there is considerable latitude in the statute.

Now, perhaps as you say we should give it——

Mr. HARRIS. This latitude at this particular stage and the flexibility that you are talking about.

Now, Mr. Springer mentioned a moment ago our health program. Without any implications or even indicating that I give any thought to it at all, we set up an advisory committee and so far as the applications of these research programs that I have had come to my attention, time after time it is a rather unusual thing that members of the advisory committees seem to always come out and have express grants made to the universities that they represent.

Now, human nature works the same in every place and I think that we have got men of honesty and integrity on these advisory committees but we left the loophole there for these applications to be made and for the implications to arise. I just don't believe that we can get great results unless we do try to put this into focus. We would like to have nothing but the highest integrity and the confidence of everybody going into it, and it seems to me that that would be the way to do it. You have your agency now, the Governor. The Governor can use whatever he wants to, whatever agencies. He may have one—in my State they had the department of welfare in this other program. It might be the commissioner of education in a State. I don't know. It might be the AIDC in the State. It might be some other agency. Let the Governor have that responsibility. And with the educational institutions or the other programs in the State, industry and all cooperating, they can develop a plan in my judgment. On the other hand, it seems to me the human reaction is going to be, as Mr. Macdonald mentioned a moment ago if MIT gets it Boston College is not going to be looking at MIT through rose-colored glasses. They are going to get the clearest vision they can to see what is going on. And I just question in my own mind—I hope you don't mind—what you are going to run into.

Secretary CONNOR. Chairman Harris, this is an extremely important point. I think you have put your finger on what could be a difficulty. Within some States there is great rivalry between or among the educational institutions and in a particular situation the Governor, if he has a State agency available, might well prefer to designate State agency in order to avoid the kind of——

Mr. MACDONALD. If he doesn't have, let him set up one.

Secretary CONNOR. Yes, sir. He can. But this deserves some more thought. So let's think about it further, if you don't mind.

Mr. HARRIS. Yes, sir. I just believe that this thing ought to be put in focus a little bit more clearly than is proposed as I have gone through the bill, and I tried to analyze some of the provisions.

Now, you mentioned earlier that the institutions for higher learning would be qualified if they offered degrees in engineering or business administration. Further down in the same paragraph, bottom of page 3, you mentioned nationally recognized accrediting agencies or associations determined by the Secretary, to be reliable authority as to the quality of engineering or business education or training offered.

Now, who do you intend to include in that group?

Dr. HOLLOMON. Mr. Chairman, there is, in the case of engineering with which I am more familiar, an organization called the Engineer's Council for Professional Development which accredits the curriculum, the faculty, and the degree of competence of engineering schools in the country. It determines that their resources, their facilities, their curriculum meet certain minimum standards. There is a similar one, and I am not as familiar with it, for business administration. The bill says that the U.S. Commissioner of Education would determine whether qualified accrediting agencies existed. If there were none, he would make a list of qualified institutions. But there are officially designated accrediting institutions that—

Mr. HARRIS. This means that these agencies referred to would be for accreditation only.

Dr. HOLLOMON. That is correct.

Mr. HARRIS. And it would not mean that they would be considered as an institution and would be a part of this program.

Dr. HOLLOMON. They would be qualified to participate in the program that sets the minimum qualifications, Mr. Chairman.

Mr. HARRIS. Well, now, that bothers me a little.

Dr. HOLLOMON. Perhaps I misunderstood.

Mr. HARRIS. If they are set up for the purpose of accreditation of institutions I don't see why they should be possible participants in the program.

Dr. HOLLOMON. I think there was a misunderstanding.

Secretary CONNOR. The national accreditation organizations would not be participants in the program.

Dr. HOLLOMON. I misunderstood you. Secretary Connor is correct.

Mr. HARRIS. This means, then, that would be utilized by the Commissioner of Education or the Secretary as the case might be. The Commissioner of Education, in its publishing of the list, would use these institutions, accreditation agencies for the purpose of determining who was accredited.

Dr. HOLLOMON. That is correct. I misunderstood your question.

Mr. HARRIS. Yes. I wanted to be sure of that.

Secretary CONNOR. Chairman Harris, as the program in each State goes along, the conduct of technical service programs involving say, three or four institutions might lead to some overlapping if they were not coordinated. For instance, the central agency could say to University Y, "Well, now, you keep going ahead in this field but because university X over here has already gone so far, you should veer off to the right or left or you don't have to go forward." In other words, some kind of central coordination will be needed to avoid inefficiencies.

Mr. HARRIS. Well, after the plans have been developed and submitted, the program suggested, and so forth, and you approve it, now, would an application come from the institution through the designated agency?

Secretary CONNOR. In the particular State, yes, it would.

Mr. HARRIS. Yes. Or if it is an institution designated it would have to go through that institution?

Secretary CONNOR. That is right, sir.

Mr. HARRIS. And if the University of Arkansas decided it wanted to carry on a certain particular research program in technology, this would be made available to all business, not only within that State, as I understand, but all over the United States.

Secretary CONNOR. Well, the purpose of the plan in Arkansas would be to help business in Arkansas but once the information was pulled together and made available, say, by the University of Arkansas, to business in Arkansas, that very information would get recorded at the Federal level so that——

Mr. HARRIS. And if the University of Illinois wanted it, it could have it.

Secretary CONNOR. That is right.

Mr. HARRIS. Now, that particular application, then, would have to come through the State agency or an institution.

Secretary CONNOR. That is right, sir, as part of the plan.

Mr. HARRIS. And it would come to you.

Secretary CONNOR. From the Governor of the State, that is right.

Mr. HARRIS. And it would have to carry a proviso giving assurances that the State or some other source would provide one-half of the total amount of the application.

Secretary CONNOR. That is right, at least one-half. And that one-half or more from the State could either come from State funds or from contributions from businesses, industries, and even nonprofit organizations within that State.

Mr. SPRINGER. Would the chairman yield at that point for clarification?

Mr. HARRIS. Yes.

Mr. SPRINGER. Did you say that one-half share would come from the institution itself?

Secretary CONNOR. The State's 50 percent or more share could come from State funds or from contributions from private industry within the State or from the funds of nonprofit organizations such as the Ford Foundation, and so forth.

Mr. SPRINGER. But the institution itself could not contribute its own 50 percent.

Secretary CONNOR. It wouldn't be expected to but I don't recall whether there is any authority for it.

Mr. SPRINGER. Thank you, Mr. Chairman.

Mr. MACDONALD. Will the chairman yield?

Mr. HARRIS. Let me finish this. I don't see any language here that prohibits it.

Secretary CONNOR. I think you are right, Mr. Chairman. It is not prohibited and if in a particular case the State's share were not available from the other sources, I wouldn't see any prohibition against a particular university making the contribution.

Mr. HARRIS. Apparently it would seem to me if the State wanted to provide its 50 percent or more for a particular program through the university channels, there would be no objection to that or there would be no prohibition to it.

Secretary CONNOR. No, sir. There is no prohibition. The bill just says that the State's contribution would be available from State or non-Federal sources. The wording is broad enough to include the kind of contribution you are talking about.

Mr. MACDONALD. On that, I would just like to comment, universities are pretty good in raising money but they don't seem as good in spending money. So I don't think it would be much of a problem. But what I wanted to ask you in connection with what the chairman of the full committee was discussing with you is this: I can understand the relationship between the State, State agency or institution and the Federal Government, but I don't understand, and I don't think anybody has given testimony pertaining to the relationship between the Federal Government and a given region. You keep talking in the bill of region-Federal participation. Could you explain that for the committee, or for me at least?

Secretary CONNOR. Yes, Mr. Chairman. Let's take the Mountain States as a possible regional grouping. It is quite conceivable that several of the Mountain States might get together and prepare a plan which could qualify for the matching grant under the bill.

Mr. MACDONALD. Would there be just one agency for the region?

Secretary CONNOR. Probably.

Mr. MACDONALD. Who would appoint that agency? If there were several States in a region; take Appalachia for instance.

Secretary CONNOR. The authority in the bill for these appointments rests with the appropriate authority in each State which could be the Governor. So the Governors by agreement could get together and decide who would be the representative of the region if there is a regional plan.

Mr. MACDONALD. And how does the bill, if it does, and if it does not—I haven't seen it—how would the Department define region?

Secretary CONNOR. There is no geographical definition. It is really left to the discretion of the States themselves by the provision that two or more States can get together for a regional plan.

Mr. MACDONALD. Well, I don't want to carry this too far, but theoretically, all 50 States could say they were a region, a region of the United States. I don't quite understand what value the breakdown for region brings to this bill.

Secretary CONNOR. Dr. Hollomon has had some discussions which I think will be helpful here.

Dr. HOLLOMON. The purpose of the regional activity is the following: Any two or more States, if they decide that they could carry out this plan, or any part thereof, best by joining together, could make an agreement to join together to make a plan for the two or more States.

Let me give you a specific example. I think it is easier to deal with specifics in this case. There is consideration being given in New England, for example, that instead of having a separate referral center for industrial information in each State in New England, at different institutions in each State, the States would get together and have one central place where this information was readily available. With

the close distances in New England, that might be very effective. The State Governors could agree that one institution in the several States would provide this central function.

They don't need to combine all of their State's plans. They just combine that central function and if they do so, this bill would encourage them by permitting the Secretary to give them 10 percent additional for that purpose. This is economy.

Mr. MACDONALD. If I follow you, then, the region would be merely used as a clearinghouse.

Dr. HOLLOMON. If that is desirable. Right. In other words, if two States that had essentially identical problems agreed that they wouldn't duplicate themselves and they agreed to do something together, we would encourage this in order to try to prevent duplication in the States. But this doesn't mean that you would have every State getting together on their whole program.

Mr. MACDONALD. Well, to go forward with your illustration, in New England, do you look to just one institution being designated, say MIT being designated——

Dr. HOLLOMON. No, no. Not at all. Only for——

Mr. MACDONALD. Could I finish my question?

Dr. HOLLOMON. I am sorry.

Mr. MACDONALD. Or would there be in each one of the States an institution and then regionally they would correlate the information?

Dr. HOLLOMON. That is correct.

Mr. MACDONALD. Is that the function of the region?

Dr. HOLLOMON. Yes; that is one function of the region.

Mr. MACDONALD. And each time the region appears here in the bill it does so in that frame of reference?

Dr. HOLLOMON. Yes, sir.

Mr. MACDONALD. As a clearinghouse, not as a representative to gather the information——

Dr. HOLLOMON. Right.

Mr. MACDONALD (continuing). For each State. Am I correct.

Dr. HOLLOMON. That is correct, depending on the agreement. This would be purely voluntary on the part of the State Governors.

Mr. HARRIS. Now, just two other points that I would like to mention: No. 1 has to do with the planning program. As I understand, this would authorize you, Mr. Secretary, with the proper application before you, to approve \$25,000 a year for not to exceed 3 years to each designated institution to assist in the preparation of a program. Does that mean that each institution that would like to participate in this would be permitted to develop plans by that institution?

Secretary CONNOR. No, sir. It does mean that for each of the 50 States, the Governor could designate one institution or State agency and that agency or institution would then make application to the Secretary of Commerce for \$25,000 per year, not exceeding 3 years on a nonmatching basis, to provide the initial plan.

Mr. HARRIS. I would like to call your attention that in this particular provision you do not mention "and/or agency." You said "designated institution."

Secretary CONNOR. I use the expression as it is defined in the bill in section 2(b).

"Designated institution" means the institution or agency in each participating State which has been designated as administrator of the program * * *.

Mr. HARRIS. I see. In other words, each State could receive for its purpose, without matching, \$25,000 a year for a period not to exceed 3 years.

Secretary CONNOR. Yes, sir; that is correct.

Mr. HARRIS. And that is for planning purposes only.

Secretary CONNOR. Yes, sir; to get it started.

Mr. HARRIS. Now, it seems to me you have stressed 5-year plans in here.

Secretary CONNOR. Yes, sir. The bill is drafted on the assumption that 5 years would be a reasonable period for the initial preparation of the plan, for the inclusion of the participating institutions, and then carrying forward the plan. It provides time for a review by a disinterested advisory group to see whether the program is worth continuing in its then present form or whether changes should be made.

Mr. HARRIS. Well, I just wondered if it would not be better to have the program—it seems like this is sort of a trial-and-error thing anyway at the present time—I don't think it could be considered visionary as such, and I think it is a practical approach, but I am just wondering whether it would not be better if we could provide a 3-year program and get it underway and have an opportunity to see how these institutions are going to react to it, how the States are going to cooperate with it and develop the program prior to going into a program that would, well, be, I suppose, definite and where they could evolve into something that would turn out to be something other than the purpose of this bill.

Secretary CONNOR. Well, Mr. Harris—

Mr. HARRIS. I would feel much better about it from my own personal viewpoint if we could do that. We have on this committee adopted, I might say to you, somewhat of a pattern on these programs of 3 years and then review. We have done that on several. One reason we did is because two or three programs got completely out of hand. It was not intended that they be plummeted into the kind of situation that we find today. So this committee decided that it would be a lot better for the programs and for the country if we took a look after 3 years to see how we are getting along.

Secretary CONNOR. Chairman Harris—

Mr. HARRIS. We adopted a program 2 years ago of the medical assistance program, medical and dental program. Now we are coming back for an extension to that program. Now we have an opportunity to see how it is getting along. I understand it is doing very well and I think there is going to be more enthusiasm generated for it. We are going to start hearings on the extension of that program June 10 of this year. Of course, it has another year to run but there is some technicality about it that makes it necessary to have a review now. We find a lot of reaction to it that is highly favorable, where if we had let the thing go along by itself, the first thing you know, it would have gotten way out of hand and I don't believe we would have the strength that we have in it now. I just wondered if we might not be better off if we didn't approach this this way.

Secretary CONNOR. Chairman Harris, I think in most situations this point of view is completely sound. The problem here is that for its administration, the program depends upon actions taken in all 50 States. With many State legislatures meeting only once every 2 years, and with some States finding this a new concept, our estimate

is that it will take a period of time for this program to get fully underway. Thus it differs considerably from a program that is administered by a Federal Government agency. This is why we are recommending this longer period of time.

Mr. SPRINGER. Mr. Chairman, would you yield?

Mr. HARRIS. Yes, indeed.

Mr. SPRINGER. Mr. Secretary, have you or Mr. Hollomon given thought to how long you think it would be before the States did implement this program?

Secretary CONNOR. All 50 States, if they are so inclined?

Mr. SPRINGER. Yes. I think this is rather important for the committee to know that if you have an opinion.

Dr. HOLLOMON. It is our guess that it would take approximately 3 years. By the fourth year all of the States will have had opportunity to organize a full program.

Mr. SPRINGER. How many do you think would implement it within a year?

Dr. HOLLOMON. A guess, Mr. Springer. My guess is something of the order of 10 to 15 within the first year. Perhaps more.

Mr. SPRINGER. Two more years to get in the remaining 35, so to speak?

Dr. HOLLOMON. Right. I think it is very desirable to have the program subject to review. In this case in which the States have to take some action and an agency or institution has to be appointed, my own feeling is that a 5-year review might be more effective, but, of course, this is something for the committee to consider.

Mr. SPRINGER. Thank you, Mr. Chairman.

Mr. HARRIS. I just have a feeling that we might be better off and develop a better program by working together and keeping everybody informed as it develops and progresses.

Dr. HOLLOMON. I do, too, sir.

Mr. HARRIS. If it looks like in a couple of years from now it is going much faster than you had ever anticipated, that then would be the time to bring all forces in with the information about how it is getting along. I would be interested in the comments of some of these people representing the institutions and the States as we go along with the hearings, but right now I just have a feeling that we might be better off to approach it in this way. I would like you to think about it any way.

Secretary CONNOR. Thank you very much. We shall do so.

Dr. HOLLOMON. Thank you, Mr. Chairman.

Mr. HARRIS. I think that is all at this time, Mr. Chairman. Thank you very much, Mr. Secretary.

Secretary CONNOR. Thank you.

Mr. SPRINGER. Mr. Chairman, may I ask a question?

Mr. MACDONALD. Mr. Springer.

Mr. SPRINGER. Mr. Secretary, if there has been any criticism of this, as I talked to the members who have tried to become acquainted with this bill, it is this overall feeling which I think the chairman has expressed very well, that there are parts of this bill which seem to be rather indefinite.

Now, when Mr. Hollomon briefed me on this in my office, I thought he did as good a job as he probably could just talking. A great more has come out here today which it seems to me is more favorable

to your cause than after I read the bill and after talking about Mr. Hollomon. I suppose that always comes as a result of hearings. But if there are any ways in which you think you could alter this bill to nail it down tighter, I think it would be extremely helpful.

Now, I think one of the problems that the chairman hasn't said to you, but certainly which has occurred to me, is that if we go to the floor with this bill, I can imagine a million questions are going to be asked on this bill; and to be frank with you, I don't know whether I could answer them all—that is, whether I can answer them all credibly so that at least my people would feel that this was the bill which justified itself. Now, if they could have heard the hearings here, they might have come to a different conclusion but this is the one problem as I read this bill which has bothered me more than anything else and I merely pass that along to you. But I think you felt a little bit of that here already today.

Secretary CONNOR. Yes. Congressman Springer, we are in this dilemma. We can get much more specific in dictating the kind of plans that a State would be limited to but we are fearful that if we do that, it will become a program of Federal dictation and not, therefore, responsive to the needs in the individual States. On the other hand, if we go through the procedure we have described and let a plan emerge from each of the 50 States, we recognize that these plans are going to differ markedly one from the other. We are unable at the moment to describe them except in general language and this raises the problem that you have put your finger on.

Mr. SPRINGER. Correct. Now, may I commend you for keeping this essentially in the hands of the States because I think it won't be of much help unless you do, but within those limitations, can you nail it down any tighter? I don't know—you can't say that today but this is something for your staff to think about.

Secretary CONNOR. We will take another look at it because we recognize this problem, sir. So thank you very much. We will look at it.

Mr. MACDONALD. In that vein, one of the things that I am sure will be of interest to our colleagues in the full House as it is to us here is your assertion that the bill represents in part a solution to longtime unemployment, national pockets of poverty, and so forth. Having read the bill and having had our discussions, I don't see really how this proposal would affect pockets of poverty or unemployment in general in any meaningful way. Could you elaborate as to how the Department feels it will go to the problem of unemployment?

Secretary CONNOR. Mr. Chairman, in quite a few parts of the country, the latest technological advances have not been put to use. As a result, using the illustration that Chairman Harris used recently, the places where this technology are in fact being used are pulling people from other States.

We think that if, within a State that has not fully used new technology, there is a program which results in improvement of the economic development potential of that State, the result will be the formation and growth of more businesses which will keep the skilled people at home in that State. This is our expectation.

Mr. MACDONALD. But isn't the other side of the coin utilized by another department of the executive branch, which reports that

technological improvements translated into the word "automation" is causing unemployment?

Secretary CONNOR. The extent of unemployment related to automation, of course, is a matter of considerable debate and concern. As we have pointed out in our testimony, even within a particular industry that is characterized by small businesses, the use of the technological information available varies widely from one company to another. Usually the companies that are making best use of the latest technical information are growing most rapidly and therefore become big companies whereas the ones not using this information stay small companies. So it is a broader problem than the automation problem as I see it.

Mr. MACDONALD. Well, I don't want you to feel that I am unsympathetic to the bill. I think as you said earlier it is a new approach and one that should be explored in any event, but I couldn't agree more with the chairman of our full committee in saying that it should be certainly subject to review if it doesn't work out in the way that the Department hopes that it will.

Secretary CONNOR. We agree with that concept. It is just a question of which period of time is most appropriate.

Mr. MACDONALD. This seems like a picayune question—

Mr. HARRIS. Would the gentleman yield there again? I think it is very important. Don't you think we could after, say, approximately 3 years, get the States and institutions, industry, and everyone enthusiastic, particularly in certain parts of the country, and then come back here, say, in about 3 years? Don't you think we could develop a much better program, have more information as to what we could utilize and how best it could be utilized?

Secretary CONNOR. My personal opinion, Mr. Chairman, is that you could do that at the end of 3 years.

Mr. HARRIS. What I am afraid of is, if you go to this thing for a period of 5 years, as you are talking about now, we run right into what Mr. Springer mentioned a moment ago. And that is a limitation that would be placed on it along with your planning and trying to accelerate it all at the same time. I am afraid it might handicap the program. It might discourage some of the States. It might discourage some of the institutions. You may not get as much enthusiastic support of it as you hoped and you feel now that you have.

Secretary CONNOR. I think there is a lot of sense in what you say. I think at the end of 3 years the experiences of the States that take the lead would be very valuable in pointing the way for the other States to follow.

Mr. MACDONALD. My last question, and I don't mean to get away from the broader aspects of this bill, but on page 9 you say:

A startling fact is that in 1963 the manufactured machinery which was exported from the United States to the European market averaged 50 percent higher in productivity than machinery installed domestically.

Now, why would that be?

Secretary CONNER. Dr. Hollomon is familiar with this specific situation.

Dr. HOLLOMON. This was as a result of the analysis of U.S. exports of various machine tools and machinery. It appears as if the Euro-

pean people particularly have demanded and gotten more productive machinery. This is simply a matter of the statistics on the type of machines exported.

Mr. MACDONALD. You mean to say that our American manufacturers when they ask for a machine are asking for less productive machinery than are the Europeans?

Dr. HOLLOMON. Apparently on the average that is the case.

Now, of course, that does not mean every company, but this is apparently what the export statistics indicate.

Mr. MACDONALD. Well, for my own information, since I will be dealing in this subject for awhile, who compiles these statistics and how are they compiled?

Dr. HOLLOMON. They are compiled by the Business and Defense Services Administration.

Mr. MACDONALD. Are there any further questions?

Mr. FARNSLEY. Mr. Secretary, your projects are the only two I know about, this one and the tourist thing, that probably have a hard way to go because they don't cost enough. You are proposing to spend money to make money. I hope you keep on this way. But I am a new boy in this town and I found out already unless it costs \$30 or \$40 million it has got no chance. Just be brave and keep it up.

Mr. MACDONALD. Mr. Secretary, on this very optimistic and happy note, I would just like to say thank you very much, and Mr. Hollomon, for appearing before us today.

Tomorrow the hearings will be resumed at 10 o'clock. They will be held in room 2218 at which time I understand we will be hearing from the universities and other private witnesses.

Secretary CONNOR. Thank you.

(The following letter was later received from Secretary Connor:)

THE SECRETARY OF COMMERCE,
Washington, D.C., June 14, 1965.

HON. OREN HARRIS,
*Chairman, Interstate and Foreign Commerce Committee,
House of Representatives, Washington, D.C.*

DEAR MR. CHAIRMAN: At the recent hearings before your committee on our proposed State Technical Services Act, you raised some important and helpful points and requested that I consider them and respond to the committee.

You inquired whether it would not be desirable to limit the authorization for this program to 3 years, stating quite properly that it would be helpful for Congress to review the activities of the program after a reasonable period of initial experience. I would like to suggest a 5-year period of authorization rather than the shorter term of 3 years. As stated in our testimony to the committee, we believe many of the States will not be able to fully implement the program until at least the third year. Since our proposed program is based on an overall 5-year-plan approach by the States, I am fearful that if the initial congressional authorization for this program is only 3 years, the interest and commitment of the States to develop the best overall programs would be adversely affected. We must keep in mind that the States themselves will have to raise, either from public funds or private sources, at least half of the costs of their programs. Therefore, I hope you will favorably consider an authorization for a term of 5 years.

Another point you raised at our hearings related to the amount of appropriations to be authorized. No specific limit is contained in the administration bill. However, as we testified, we anticipate that the total expenditure over a 5-year period, assuming the gradual participation of all States, would not exceed \$140 million. Therefore, I suggest for your consideration that if you conclude a specific limit or authorization is desirable, this be set at \$140 million for the 5-year period.

I would like to say that we would have no objection if a provision were incorporated in the bill to require the Department to report annually to the Congress

on the program. It seems to me this would go far to achieve the objectives implicit in the suggestion that this authorization for the program be limited to 3 years. Further, the Department of Commerce would, of course, be happy to cooperate at any point during the term of the program in formal hearings before your committee concerning our experience and administration of the bill.

Another question which came up at our testimony related to the choices available to a State in selecting an agency or institution to plan its program. I believe this is fully answered by section 2(b) of the bill which defines the "designated institution" as the agency or institution in each participating State which has been designated by the State. In other words, the administration bill gives to each State full flexibility in choosing the planning agency for its program. The designated institution does not have to be a university or academic institution. It may be such an institution or it may be a nonacademic State agency.

I believe one other point brought out during the hearings was whether we could be more specific in describing the kind of programs that the States would carry out under this proposed legislation. Section 2(a) of the bill contains what we believe is appropriate statutory description of the kinds of activity that would comprise a State program. We do not believe it would be desirable to attempt to be more specific in the bill itself. We take this position because we believe that State officials should have sufficient flexibility to propose the exact activities most needed and most useful to their own State.

However, in an effort to clarify our own thinking as to the kinds of programs which we think would be suitable under this legislation, I am enclosing a description of the specific programs now in operation in four States on a modest scale. These are generally illustrative of the kinds of work which might be undertaken under this bill.

Thank you very much for your interest and help in connection with this proposed legislation. Please let me know if we can furnish any other information.

Sincerely yours,

JOHN T. CONNOR,
Secretary of Commerce.

GENERAL STATEMENT ABOUT EXISTING STATE PROGRAMS OF TECHNICAL ASSISTANCE TO INDUSTRY

The task of coupling advanced science and technology to industrial use is best undertaken by local institutions specifically charged with bringing new technology to bear on local industrial and economic problems.

There is considerable experience in industrially oriented programs from which to draw. About 28 States now operate university-industry programs of various kinds. All are small in comparison to the need and opportunity in their regions, but a few stand out because of their greater scope and effectiveness to date. Of these, four have been chosen for illustration. They represent four of the many different styles of operation which may be used, with equal effectiveness, in different regions. The programs described are only a partial list, and are included because they are comparable to the kinds of activities envisaged by the State technical service program.

Iowa

The Center for Industrial Research and Service at Iowa State University was established in July 1963, as a part of the university's college of engineering. The stated goal was to assist in the industrial growth of Iowa through the following three functions:

(a) Coordination of industrial needs with the technical capabilities and specialties available in the State and, particularly, those available through the staff and facilities of Iowa State University.

(b) Assist with special problems facing industries in Iowa by full-time staff assigned to work directly with the center.

(c) Publication of technological information from research and extension activities relating to the industrial climate and growth of Iowa.

During the past 18 months the following accomplishments can be noted:

(a) Over 1,500 calls have been made on Iowa industries.

(b) A wide variety of cases and problems, totaling over 460, have been handled.

(c) Most of the consulting firms and other professional groups in the State have been cataloged for reference, including:

1. Engineers.
2. Architects.

3. Patent attorneys.
4. Certified public accountants.
5. Testing laboratories.
6. Advertising agencies.
7. University professors.

(d) An information retrieval system has been put into use.

(e) Reports of completed research have been prepared on a number of subjects.

A summary of the 460 cases handled to date indicates the type of work being done. Fifty-six percent of the cases came from business firms and manufacturers, 32 percent from individuals, 8 percent from other Government agencies, 2 percent from development groups, and 2 percent came from trade associations and miscellaneous sources.

Georgia

The development division at the Georgia Institute of Technology was established in 1956 as part of the engineering experiment station, with a main office in Atlanta and field offices in other cities.

The overall goal of the division is to develop the natural, human, and man-made resources of Georgia and the Southeast. Operations cover several major fields including industrial technical services, manpower resource analysis, and industrial economic analysis. Areas of staff specialization include chemical engineering, civil engineering, electrical engineering, industrial engineering, management engineering, mechanical engineering, textile engineering, textile manufacturing, agricultural economics, area development, business administration, business education, chemistry, economic geology, economics, geography, industrial management, journalism, library science, marketing, and sociology.

A basic data unit provides research reference sources for the staff as well as for outside groups. In addition to these continuing activities, special studies of statewide resources and overall development problems are conducted periodically.

More than 250 major technical assistance projects for business and industrial firms have been completed by the industrial services staff and field office personnel. About 2,000 requests a year are received for information, and a backlog of 10 to 15 requests for technical assistance is not uncommon. These requests usually develop without direct solicitation. Recently, this program has been expanded under the auspices of the Associated Industries of Georgia, an association of most of the major industrial firms in the State.

Professional consulting firms in the area are kept fully informed of progress and activities through an advisory council which meets monthly with members of the institute staff. Without exception the response of consultants has been favorable.

North Carolina

The industrial extension service of the school of engineering at North Carolina State University was established by the State in 1955 to achieve a greater utilization of North Carolina's raw materials, and to develop its small industries.

The staff provides the following types of services, among others:

- (a) Technical studies, analyses, and assistance.
- (b) Industrial film library.
- (c) Information distribution.
- (d) Workshops and short courses.

Many of the requests for technical assistance are generated by small chemical producers.

Wisconsin

University of Wisconsin, university extension division, chairman, Mr. Paul J. Grogan.

The university extension division operates through the department of engineering of the University of Wisconsin. By far, the greatest effort is in the education extension area.

The northern Wisconsin development project staff has the following objectives:

- (1) To work closely with firms, providing management counsel on a continuing basis in specialized areas such as engineering, production methods, product development, finance, and marketing. These companies are chosen on the basis of growth potential, need for assistance, and management cooperation. Technical assistance is available from private and university consultants, University of Wisconsin extension specialists, and State and Federal specialists. An integral part of this objective is the "demonstration" concept, or the use of project findings to illustrate to other firms the growth

which can be realized by application of improved management and engineering methods.

(2) To provide short-term assistance to other firms and to economic development groups in northern Wisconsin.

(3) To provide an advisory and referral service aimed at interpreting the broad range of assistance available from the University of Wisconsin and approximate Federal and State agencies, as well as private sources.

(4) To encourage the development of local forms of permanent support for this type of service to the business community.

Mr. MACDONALD. The hearing will stand adjourned until 10 tomorrow.

(Whereupon, at 11:55 a.m., the committee was adjourned, to reconvene at 10 a.m., Wednesday, June 2, 1965.)

STATE TECHNICAL SERVICES ACT OF 1965

WEDNESDAY, JUNE 2, 1965

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON COMMERCE AND FINANCE
OF THE COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE,
Washington, D.C.

The subcommittee met, pursuant to recess, at 10 a.m., in room 2218, Rayburn House Office Building, Hon. Torbert H. Macdonald (chairman of the subcommittee) presiding.

Mr. MACDONALD. The hearing will come to order.

The first witness today will be our very able and hardworking colleague from Florida, Mr. Claude Pepper.

STATEMENT OF HON. CLAUDE PEPPER, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF FLORIDA

Mr. PEPPER. Thank you Mr. Chairman and members of the committee. I want to take this opportunity to thank you and the other distinguished members of this committee for allowing me to take a few moments of your time to voice my support for the proposed Technical Services Act of 1965 which the committee is considering today.

I am one of a number of Members of the House who had introduced this legislation. I am in complete agreement with the stated purposes of this bill. It is vitally important that we make the fullest possible use of the technological knowledge arising from our massive postwar research and development efforts. The fullest use of this information is essential for the continued growth of our domestic economy, and it is even more important, if that is possible, to the maintenance of the competitive position of our goods in the world markets.

The ability to maintain an expanding volume of U.S. exports, in turn, is our main hope for eliminating our chronic balance-of-payments problem within a framework of freer trade, travel, and investment throughout the world.

If we look back to the period just before World War II, we find that the bulk of our Nation's research and development activity was both supported and performed by private enterprise. In 1940, Federal spending for research and development amounted to only \$74 million, or a little under 1 percent of total Federal spending. But, since then and especially since the middle 1950's, the Federal investment in research and development activities has mushroomed to a level of approximately \$15 billion a year, or 16 percent of the total Federal spending in the current fiscal year, fiscal year 1965.

Might I interpolate, Mr. Chairman and members of the committee, to say that I recall when we set up a resolution of the Congress which originated in the Senate on the National Cancer Institute in 1937.

At that time hardly anything was being spent by the Federal Government in the field of research in the area of cancer. The first appropriation was \$500,000 and that went ahead until 1946, when I, in the Senate, and former Senator Neeley, in the House, introduced a bill to appropriate \$100 million to remain available until spent, in the field of cancer research.

A year or so later we came up with the first Federal appropriation of about \$8 or \$9 million and the following year it went up to \$14 million.

Since that time it has continued to rise.

A little while after we had gotten the defense program underway, why, my attention was called by Mrs. Albert Lasker of New York, who has done so much in the health research field, to the fact that the Federal Government was spending only \$6,000 a year, as a total expenditure, in the whole field of research in heart and circulatory diseases which killed 1 out of 3 of our people and we started then a program to give some Federal funds. Mrs. Lasker and I brought the heart specialists for a hearing before the Senate Appropriations Committee. One million dollars were put in by the Senate Appropriations Committee by Senator Styles Bridges who was then chairman. The House reduced that to \$500,000. But that was the first substantial appropriation which was made in the field of heart research. Previously we had been appropriating only \$6,000 a year.

Some of those here, and your distinguished committee chairman, Mr. Harris, particularly, will recall just how relatively recently these Federal research programs have gotten underway and how great the expansion has been and how meaningful it is to the country, I believe, that we have them and how constantly and significantly helpful it has been in the field of research, both health and economic research, to have Federal participation.

Private research and development spending has also risen during this period.

According to estimates made recently by economists that the Battelle Memorial Institute, a highly respected midwestern scientific research organization, it is conservatively estimated that privately supported R. & D. amounted to around \$5 billion in 1964. And it should be noted that much of our Federal support goes for research and development work performed in private industrial and university laboratories.

Nevertheless, it is obvious that the Federal Government now plays a dominant role in the research and development field, supporting close to 75 percent of our total national investment of \$20 billion a year, and that this gives the Federal Government a heavy responsibility for seeing that the fruits of this massive research effort are not wasted.

We have an obligation to see that the fullest use is made of the technological knowledge developed on this great investment in scientific and engineering labor.

I am very anxious that we do everything we can to insure the effective civilian utilization of the knowledge gained in the course of our space and defense research efforts. I am aware that both the

Department of Defense and the National Aeronautics Space Administration are actively promoting the spinoff of their technical developments for use in the civilian economy, but I think we must do more. I think we must do more to achieve a better regional dissemination of this information, and I think that we must do more to engage the active cooperation of our State governments, local committees, and industrial groups in the effort to make better use of this knowledge.

We are considering in this Congress a number of broad programs to encourage greater Federal, State, and local cooperation in such areas as medical care, transportation, pollution control, city planning, education, housing, and others. And in many of these programs we are giving special attention to assuring a better geographic distribution of the opportunities and advantages being generated.

We should approach this problem of the greater utilization of available technological knowledge in this same spirit—so that the boons of scientific discovery will be made available to the economic interests throughout our country, and will be made available to them through a program encouraging self-help and State and local initiative. I believe the program envisaged under the Technical Services Act of 1965 will contribute importantly toward this double objective of greater and more balanced economic growth throughout the country.

Now, Mr. Chairman, may I interpolate again. We know, of course, that knowledge is interrelated if not interdependent and that if knowledge is generated in one area, the chances are it will have an effect upon other areas.

Just for example take what the influence of World War II in the development of the small vehicle has been upon the development of small vehicles in other aspects of our economy.

I hope if I mention a personal incident you will not mind. When the first jeep was brought here to the Capitol, Senator Robert Reynolds of North Carolina was chairman of the Military Affairs Committee as it was then called, of the Senate and he and I got into that jeep and we rode up the steps of the Capitol from the White House direction, all bumping up and down those long steps. [Laughter.]

This is the first time I had ever seen an automobile, as it were, going up a flight of stairs and we were all out there looking at this new vehicle, the jeep which had come into use to serve, primarily, a military purpose.

Now we have every kind of little vehicle. This is just a very crude illustration of what research has done, primarily for military purposes, but at least in terms of potential value to other aspects of the community.

Mr. HARRIS. Is that the reason they are used by mail carriers also? [Laughter.]

Mr. PEPPER. Maybe so, maybe so.

I will just say this, too: You will agree, I am sure, that if we had had the little modern motorbikes when we were young, and riding bicycles, we would have saved a lot of pedaling. [Laughter.] In the State of Florida and its Third Congressional District, which I have the high privilege of representing, we have seen the economic benefits of new and expanding industry developing from a science-oriented base. Innovation and a high degree of technical efficiency are the hallmarks of the growing company, the company that pays better

wages, creates new products and new markets, and acts as a spur for community and national economic growth.

The Technical Services Act of 1965 can help more of our companies, especially our smaller businesses, become rapid growth, high efficiency operations. They can bring our university scientists and engineers, our economic development groups, and our industry groups into closer cooperation for the benefit of every State and the Nation as a whole.

In addition to what this program can contribute to our domestic well-being, to a rising prosperity for our people, and better earnings for our business enterprises, its contribution to our overall national efficiency can be extremely important in the areas of foreign trade and national security.

A more efficient economy can enable us to sell more goods in increasingly competitive world markets. It can enable us to make a larger contribution out of our rapidly expanding economy for the development of less fortunate nations throughout the world. And in any international crisis it can give us a stronger industrial foundation for the defense of our liberties.

Mr. Chairman, it is my belief that the Technical Services Act of 1965, which was proposed by the President and which I and 13 other Members of the House are sponsoring, will make a far-reaching contribution to our national prosperity, security, and progress far exceeding its costs.

This committee is to be highly commended for acting so promptly in scheduling hearings on this very important matter. It is my hope that the committee, following careful study of the bill, will see fit to recommend its approval, and that the Congress will take affirmative action at the earliest possible date.

Our Nation has benefited immensely from the technological revolutions of the past. This program will give us greater assurance that we will continue to advance on the broadest technological base in the years to come.

Thank you very much.

Mr. MACDONALD. Thank you, Mr. Pepper.

Mr. PEPPER. I would only add, Mr. Chairman and members of the committee, that basically what this legislation proposes to do is to bring about a closer relationship between those who are generating this great mass of knowledge and those who are engaged in the business of the application of that knowledge in practical ways in various aspects of our economy in our country. I would like to thank you very much, Mr. Chairman, and members of the committee, for the privilege of being here.

Mr. MACDONALD. Thank you, Mr. Pepper. We have certainly enjoyed your appearance here today and I congratulate you on your statement.

Mr. PEPPER. Thank you.

Mr. MACDONALD. Are there any questions of the gentleman from Florida?

Mr. HARRIS. Mr. Chairman, I want to say that I am glad to be here during the presentation of our colleague from Florida. I am sorry I won't be able to stay for the presentation of our colleague from Colorado.

Mr. PEPPER. Mr. Chairman, may I be permitted to say that the distinguished chairman of the main committee, the parent committee,

has done, if not more than anybody in the Congress, certainly as much as anybody in the Congress to broaden the frontiers of knowledge in all aspects of research and I want to take this opportunity to commend him for the leadership that he has given.

Mr. HARRIS. Thank you very much. I would add to my colleague that I do have some pride in the fact that I participated in the establishment of the National Science Foundation, back in the early forties—I had forgotten how long ago it was.

Mr. PEPPER. I remember that.

Mr. HARRIS. But we all know the tremendous contribution that it has made to the welfare of the Nation and of the world so I cannot help but have a little pride and a lot of satisfaction out of the small contribution I made to that program. For various reasons I am very happy about some of the things that we have achieved in this committee with the help of many others, including members like the gentleman from Florida, and what we hope to be able to achieve through the efforts of this committee.

I, as chairman, could stay in this committee for a long while but I want to get this man at a meeting of the Rules Committee. [Laughter.]

We have got a rule we are seeking so I have to take him with me over there.

Let me just say what you have seen here this morning is some indication of the reason why the University of Arkansas sought him out as a professor of law back in the days I am not going to mention [laughter] although he is older than I am, but it is before I got out of school.

Mr. PEPPER. 1924 and 1925—that was one of the happiest experiences of my life.

Mr. MACDONALD. Thank you very much, Mr. Pepper.

Mr. HARRIS. Is Dr. Caldwell here?

Dr. CALDWELL. Yes.

Mr. HARRIS. I want to take the opportunity to say hello before I leave and to some others who may be here. I hope I will be back later, Mr. Chairman, if I am able to.

Mr. MACDONALD. Fine, Mr. Chairman.

Is the Honorable Roy H. McVicker from Colorado here?

Mr. McVicker, we will be glad to hear you at this time.

STATEMENT OF HON. ROY H. McVICKER, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF COLORADO

Mr. McVICKER. Mr. Chairman, it is indeed a great honor and pleasure that I appear today to testify on behalf of my bill, H.R. 7335, designed to promote economic growth by supporting State and regional centers to place the findings of science usefully in the hands of American enterprise.

This bill would permit the Federal Government to join with State governments, universities, and local industry in stimulating the industrial and economic growth of States and regions in the Nation through the application of science and technology.

The bill is addressed to the economic problems about which we read every day—long-term unemployment, regional pockets of poverty, industries which are losing their competitive positions, and

increasing foreign competition in both domestic and world markets. These problems point to the increasing need for developing mechanisms to bring the latest developments in technology into the production lines and plants of our local industry.

Just as the problems are local, so should be their solution. This would establish mechanisms concentrated on the local level, utilizing local leadership, local initiative, local resources, and local participation. Federal funds, on a matching basis, would be used to encourage the establishment or expansion of local institutions specifically destined to meet the needs of the local economy.

A State wishing to participate in the program would designate an institution, either a State university or agency, to administer and coordinate the State's technical services program. This institution would prepare a 5-year plan, outlining the technological and economic situation in the State, the major regional and industrial problems, and the means to be used in assisting in their solution. The institution would also prepare an annual technical services program, including the objectives for the first year, the budget, and the responsibilities assigned to each qualified institution participating in the program.

The 5-year plan and the annual program would be submitted to the Secretary of Commerce. Federal matching funds would be made available to the designated institution to support eligible programs. The Secretary of Commerce would establish a formula designating the maximum annual Federal payment, taking the following criteria into consideration: (1) population, (2) level of industrial and economic development and productive efficiency, and (3) technical resources.

His formula will be weighted to provide funds to States and regions where industrial development has lagged behind its potential and where technical resources are weak. The population criteria will be applied in a manner which will permit even the smallest and least populous States to participate in a meaningful and profitable program.

There are a variety of effective programs of university-industry cooperation in operation in 28 States at the present time. One especially notable program is conducted under the auspices of the Denver Research Institute, an integral part of the University of Denver which engages in sponsored research for Government and industry. This institute offers ample evidence of the potential effectiveness of programs that the subcommittee is now considering. To stimulate the process of technology transfer, the DRI has developed a highly motivated staff of engineer-economists, engaged in effectively interpreting the significance of scientific and technological advancements to the commercial entrepreneur. These economists are studying new techniques for coupling technological innovations with potential users in industry, thereby providing the bridge between the generation of advanced technology and its use in technologically oriented as well as underdeveloped industries. In addition, these men are carrying out fundamental research on the processes by which technology is diffused and applied, seeking new ways to accelerate the transfer of knowledge into use.

The Denver Research Institute consists of seven operating divisions: chemistry, electronics, electromagnetic propagation, industrial economics, mechanics, metallurgy, and physics. Research interests in these divisions cover a complete spectrum from basic investigations

to directed developmental efforts. A number of large research programs are also conducted by the institute outside the divisional structure.

But such programs, effective as they are, are still small in comparison to the need and opportunity in their regions. If we are to promote our economic growth to the fullest possible extent; if we are to achieve and sustain a high level of employment throughout our Nation; and if we are to improve our competitive position in world trade—the hiatus between the technological developments in our laboratories and their application in our industries must be erased. I believe this bill will accomplish much toward the end of nurturing our economic growth and prosperity.

Mr. MACDONALD. Are there any questions? If not, we thank you for your appearance, Mr. McVicker.

Mr. McVICKER. Thank you, Mr. Chairman.

Mr. MACDONALD. The next witness is Mr. John C. Calhoun, Jr., vice chancellor for programs at the Texas A. & M. University, College Station, Tex.

STATEMENT OF JOHN C. CALHOUN, JR., VICE CHANCELLOR FOR PROGRAMS, TEXAS A. & M. UNIVERSITY, COLLEGE STATION, TEX.

Mr. CALHOUN. Mr. Chairman, I have a prepared statement which I believe the clerk has distributed to you, and I will highlight certain points. It is a pleasure, Mr. Chairman and members of the committee, to appear before you today to speak on behalf of H.R. 3420 the State Technical Services Act of 1965.

My name is John C. Calhoun, Jr. My home is in College Station, Tex. I am vice chancellor for programs at the Texas A. & M. University system, which is the land-grant university for the State of Texas. The institution for which I work has a number of programs in the area covered by this bill, some of which I will describe, but I wish to emphasize, I do not appear here on behalf of that institution. The comments which I express and the recommendations which I make are a matter of personal analysis and opinion.

I have taught university engineering courses from the sophomore through the graduate level, have supervised research projects, and have taught continuing education courses. Experience as a department head, as a dean of engineering, as a director of an engineering experiment station, and as a director of an engineering extension service have brought me in contact with both opportunities and problems in the advance and use of technology. In a consulting capacity with a number of industries, I have dealt with the problem of updating personnel. Recently, as president of the Society of Petroleum Engineers of AIME, I initiated a study on continuing education to examine the need of members of this professional society for maintaining their professional quality through current awareness of advances in technology.

It is from this general background that I offer my comments this morning about the proposed State Technical Services Act of 1965.

I believe this proposed legislation is needed, and I recommend to you that you give favorable consideration to its enactment. It will

provide the stimulus for a general advancement in technology that will not come about in any other way.

First, I would like to give you some of the general reasons why I am in favor of this legislation. Second, I want to indicate a few things I think could be done in Texas, based on the programs that I now see in operation. And, finally, I will make a few suggestions for improvement in the details of the proposed act.

Our Nation is making a considerable investment in research and it is important that this investment pay dividends. The realization of benefits through the use of research findings is not, however, an automatic process. It is necessary that we apply efforts to the job of using new knowledge.

Research has actually become an industry of its own and is carried on most efficiently on a large scale in highly organized programs. The individual research man is still the key to much of our advancement but his environment is more and more tied to a research team.

In addition, the execution of sophisticated research requires rather complex and sometimes very sophisticated apparatus or access to special environments such as those of the atomic nucleus, the ocean, or the atmosphere. The individual researcher or the small research organization find it difficult to maintain the spectrum of tools and specialties to make research fruitful.

These changes make research itself more efficient, and allow the research worker to be highly creative and motivated. These forces at the same time have a tendency to isolate research from its ultimate application. Research can now sustain its own internal growth as an end unto itself. Its full use in our day-to-day industrial world will not be achieved unless we specifically give attention to the matter.

There is also a critical size that is an important consideration to the conduct of research. The large corporation will be able to sustain its own research organization with the necessary breadth for it to be vital. The small company cannot. This sharp distinction between those industries of sufficient size to carry on their own research activity and those that cannot leads us to a very real situation of have versus have not industries. The latter must look to sources outside their own organizations for technological stimulation.

It is important that the bridge from research activity to applications and use of technology in private enterprise be narrowed rather than widened. Our attention to the flow of information from a basic research investment to utilization has been primarily from the academic research field into the graduate student program; from federally supported contract and national laboratory research into Federal programs; from the large industrial and corporate laboratory into the large corporate business. There is essentially no bridge to carry research information from the academic or Government laboratory to the small industry or to the isolated individual engineer.

The little that is done has been generated through some of the State engineering experiment stations and the not-for-profit research foundations working in localized areas on localized subjects.

In my opinion a larger part of our economic activity and organized technology exists in smaller units than we ordinarily realize. A large number of companies are not only too small to have research organizations, but are too small indeed to have engineers or professional technological employees of any type. There are also many

examples of individuals who make poor or ill-advised investments that never get off the ground because they are isolated from technology. Industrial development is more and more related to what comes out of the research laboratory and to the advances that we make therein. In addition, many individual engineers, some of them employed by large companies, work in isolated places where they do not have an opportunity to stay up with the main stream of technological events.

In Texas there is a group of public institutions also that are in need, in my opinion, Mr. Chairman, of technological information.

In Texas, for example, there are 11,000 industries that do manufacturing of some sort. At least 80 percent of these have less than 500 employees. In other words, they are classified as small businesses.

In Texas also, we have 431 cities over 2,500 in population. Of these, 410 are in the category of 2,500 to 50,000 people. Only 21 are 50,000 or over, a size that gets to the point where the community can muster their own technological advice.

Even among the highly organized professions such as that of petroleum engineering with which I am most familiar, there are a large percentage of individuals who are in relatively isolated situations. A survey done for the Society of Petroleum Engineers last year showed that 26 percent were employed at locations more than 50 miles from a university and, presumably, from an opportunity to undertake continuing education, and over 50 percent were more than 50 miles away from a university with a department of petroleum engineering—that is to say, the field of technology of their specific interest.

Twenty percent of those in this profession were employed over 40 miles away from the nearest location where a professional group of their cohorts would hold periodic meetings. This distribution is in spite of the fact that the petroleum industry has a relatively high percentage of large corporations and highly organized research laboratories.

The picture that I am portraying is of a research activity which has become highly organized and highly sophisticated and which, because of its nature, must be carried on in large groupings with an internal rather than an external orientation. On the other hand, a surprisingly large number of small industry units, of individual professionals, and of organized municipalities not only do not have research organizations but have little technological capacity to identify their needs. They have no access to research findings other than those they stumble upon. The situation, in fact, is not too unlike the regional imbalances that exist in our national growth.

I do not see any existing agencies, either Federal or local, that are directed to alleviate this specific problem; namely, the absence of a bridge between our growing research investment with its body of technological knowledge and our small industries, our isolated individual professional, or our municipalities struggling with our technological age.

There has been much talk about continuing education for the individual engineer over the last 10 or 15 years and there has been a general recognition that the individual engineer is not keeping up. There has not been a parallel attention paid to the equivalent lag on the part of the small industry or the small community and to the fact that they are not keeping up.

We need, first, to recognize this problem.

Then, we need an agency or machinery to focus on the problem and consolidate the individual efforts that have sprung up within the States. Along with this focusing machinery we need to provide stimulation for the small businessman, the small community, and the individual engineer to help themselves. They need to be provided, however, with analytical help and with the background material necessary for them to identify where they stand, how far they lag behind the best current knowledge and what is available for them to maintain pace with the rest of technology. Not the least of the requirements is the necessity for planning and prediction. Many of the small industries now going on a year-to-year basis have no idea at all how they may have to change in order to be in business 5 years hence.

I see the State Technical Services Act, therefore, as being directed toward filling these kinds of needs.

Now, let me tell you a little about some of our programs at Texas A. & M. University and what I see as some specific areas for which we could use additional assistance.

The Texas Engineering Experiment Station, Texas Transportation Institute, Texas Engineering Extension Service, the Texas Engineers Library, and Texas A. & M. University Office of Continuing Education are all engaged in the types of activities outlined as technical services in the proposed legislation. Let me point out that each one of these, however, is engaged in a very small fraction of what is covered in this legislation. Our funds are limited and we have not been able to carry on these programs covered in the legislation at the intensity needed, or on a total geographical coverage basis.

Our industrial economics research division has been doing area development studies, marketing research studies, and industry analysis for a number of years. This staff of 6 full-time researchers and a technical librarian, during the past 2 years, have done area developmental program studies for 10 small Texas communities and have carried on 1 regional study composed of 5 counties. During the same period they have also conducted 8 major marketing research projects for industrial firms in Texas and have answered more than 100 individual inquiries pertaining to market information.

This program operates on an annual budget of \$75,000, of which about \$10,000 is State funds, seed money, so to speak, and the remainder is paid in by industries, communities and individuals who make use of the program.

One of the big deficiencies in this program is that it is almost impossible to undertake regional studies. There are no logical sponsors for regional studies. Cities will support economics research into their own community economic base, but they will not very often give support to the analysis of a region. There are 14 economic regions in Texas identified by Federal agencies and it would be very desirable to undertake basic research studies of the economic attributes of each of these regions.

This kind of program that is carried on by this economic survey system tells what technological and resource base there is to work from if one wishes to stimulate new or existing industry.

The Texas Engineering Extension Service specializes in extension programs and special courses, and this is a different kind of program,

directed at bringing the latest technological information to the attention of working industrial people. This spring, for example, the service initiated four new programs: industrial radiography, telephone technology, electronics and project managing for mechanical contractors. These courses are using the latest technological changes which we can work into the course including nuclear and computing techniques. Approximately 14,000 persons enroll each year in training programs and short unit courses conducted by the engineering extension service, and of these about one-third are already employed in Texas industry. Our major limiting factor here is lack of funds to organize new reference and instructional material. And, incidentally, of this program about one-third of the funds are State-appropriated funds and about two-thirds are generated from fees and charges made to the participants.

The Texas Engineers Library for years was the focus of engineering reference work of professional engineers in Texas. Unfortunately, lack of funds have required that this unit be terminated. Special requests for library searches and bibliographies from practicing engineers of Texas were handled through this library, but it has been inactive for about 6 years. It should be resumed and this is one of the things we would like to do.

Since 1953, all literature search as needed by the Texas Highway Department has been conducted at Texas A. & M. by the librarian of the Texas Transportation Institute. This particular function is supported by the highway department. This is an example of what can be done if you know that there are the means to do it.

One of the more dominant programs that has contributed immensely to the application of new science and engineering to Texas industry and public service institutions in recent years has been our data processing center. Through its special courses, computer tapes, reports and individual relationships with industries, a large input has been made to the advancement of industrial technological competency. To date, however, this has been localized to those groups who have seen the need and have been willing to support the activity. There is no general support available.

The many short courses and conferences which have been carried on through our office of continuing education during the past 12 months include a protective relay engineers conference, a process industry instrumentation conference, a water and sewage course, a traffic engineers conference, a highway engineers course, and a special course in reservoir engineering and well drilling, respectively. These particular conferences and courses are directed especially to the transfer of new science and engineering to operating personnel, most of whom are engineers or engineering technicians.

One of the biggest drawbacks to the dissemination of advanced technological knowledge through these seminars and conferences is the large effort to initiate a program. It takes much more to put the program in orbit than to keep it going. Many times a needed program doesn't get off the ground simply because the stimuli cannot be focused nor available time and funds diverted from existing programs to launch the new program. One of our greatest needs in this respect is for individuals who can do analytical work on given subject matter areas, condense the appropriate material into up-to-date programs, and organize the format to make this information available to industrial groups.

It is also very difficult at the present to survey the existing level of a technology as it is practiced within a given industry. For example, one could ask: "What level of chemical engineering technology is now in use by the smaller refineries throughout the State of Texas?" This question cannot be answered until a survey is undertaken. At the moment we have no funds to undertake such surveys and to the best of my knowledge, such funds are generally lacking throughout the Nation. This applies to all areas of technology.

In short, I say that our society seems to take the position that it is up to the individual engineer or the individual small industrialist, or the individual small municipality, to seek out their own salvation. In most instances, however, these people do not know where to start. Generally, they don't know how far behind they are. One of the first tasks we face therefore is to establish some method and means by which individual small industries, engineers, or cities can measure their own technological standing. This is one of the things we would embark upon in Texas.

One of the small businessman's problems when he knows that he needs help is where should he go once he knows this. There are no organized technological clinics to which the small industry can appeal for aid. We need organized, talented groups on a State or regional basis to analyze given industries and given technologies to determine the actual state of the art and the particular impacts upon this which will produce change. We have not applied our analytical ability to learn where our technological illnesses exist and what we may do about them. This is another thing we would like to do in Texas.

Consequently, in our State I believe we would not only be ready to undertake the creation of a State plan, but I would propose a few specific programs. First, I would emphasize studies that look at regions instead of individual cities in order to evaluate the available industrial base and resource base. Second, I would propose surveys and analyses of the state of technology as it is currently practiced, and an evaluation of the gap between current practice and the best level of knowledge. And third, I would support the establishment of analytical teams and groups to do the background work and to organize programs so that both the small industrialist and the individual technologist would be stimulated to seek assistance.

Finally, let me comment on a few changes that I would suggest in the act itself. I believe these suggestions will improve the act although I emphasize, I do not think they are critical.

In the first place, I think its purposes ought to be broadened so as to include placing the findings of science usefully in the hands of American civic and public service institutions as well as in the hands of industry.

In the second place, I would delete the last sentence of section 2(c)(2) so that the Commissioner of Education will not embark upon the activity of accrediting educational programs.

Third, I would limit the formula basis for determining allotments to States to (a) current population and (b) current industrial development.

Fourth, I would be more specific as to the naming of the "designated" institution in each State for preparation of a State plan. Either one particular institution in each State should be named or the choice should be placed in the hands of the Governor of each State.

In summary, Mr. Chairman, I believe this is a significant peice of proposed legislation and I urge your favorable consideration of it. I think we are ready to use the support effectively in Texas.

I thank you for the opportunity to make this statement.

Mr. MACDONALD. Thank you very much, sir, for a very fine presentation here today. As you were speaking a couple of thoughts came into my mind. You kept referring to the benefits that small communities would gain from this proposed bill.

Mr. CALHOUN. Yes.

Mr. MACDONALD. I have read and reread the reports about the bill and I don't quite follow the way in which a small community would benefit.

Mr. CALHOUN. Well, sir, I spoke about small communities because I think they, as well as the individual engineer and the small industry, are three "institutions" that are in the same position. This bill as it is now would cover the small community only indirectly—actually it wouldn't cover it as such.

Mr. MACDONALD. No.

Mr. CALHOUN. But I think it is all part of the same problem and I make the suggestion that the bill be broadened to include them.

I am not talking about social problems of the community. I am talking about technology as it is practiced in the community. The man who runs the sewage disposal plant, the water supply system, or the people who carry on street improvement programs and other matters that involve technology are all as much in need of being at the forefront of technological information as are the people in small industry.

Mr. MACDONALD. Well, don't you think, to speak in terms of a concrete instance and to use your example of the engineers who run certain types of municipal services, that such persons might have a particular journal and/or trade association through which they could exchange this information?

Mr. CALHOUN. Yes; many of them belong to the American Public Works Association, or they belong to the Society of Civil Engineers, or the American Institute of Architects or other professional groups. But the professional organizations working on these matters recognize the same kind of lag that I have pointed out and that is the reason that my own association went into the study of what could be done to upgrade the individual practicing engineer.

My own opinion, is that in general cities, particularly those of small size of 2,500 to 5,000, just really cannot afford to hire engineers; or maybe they can just hire no who has the job on a "firefighting basis." In other words, his total time is consumed in just taking care of the little day-to-day things that come up. It takes a lot of time to look after just those things that keep the average citizen satisfied without clobbering the administration. There is no group of really analytical people, however, available.

Mr. MACDONALD. Which administration are you talking about? [Laughter.]

Mr. CALHOUN. The city administration.

Mr. MACDONALD. Oh.

Mr. CALHOUN. I think there is a real problem in the small community and whether this bill can cover it or not is up to you gentlemen. As it is presently written it does not.

Mr. MACDONALD. Well that is an interesting observation.

The second point I would like to raise with you is something that we were discussing yesterday with the Secretary of Commerce, and I don't know if any of you gentlemen were in the room or not.

Mr. CALHOUN. I was not.

Mr. MACDONALD. But I asked the Secretary a question about the natural rivalry that might come about if the Government were to appoint one university as being their agent in this field. We know of the great rivalry between Texas A. & M. and——

Mr. CALHOUN. And the University of Texas?

Mr. MACDONALD. Yes.

Mr. CALHOUN. Right; and the University of Houston and so on. All of these are publicly supported institutions, of course.

Mr. MACDONALD. They are all land-grant institutions.

Mr. CALHOUN. No; they are not all land grant but they are all publicly supported.

Mr. MACDONALD. Well, we have noted rivalry in that field—I have seen some of it myself, right on the field. [Laughter.] And very harsh [athletic] rivalry it is, too.

I must say it is to be commended from that point of view, but do you think that the bill as now written would tend to settle those rivalries or do you think that those rivalries would be strengthened because of the fact that the State governments would have to initiate such programs by appointing one of their number as the designated institution for purposes of this proposed act?

Mr. CALHOUN. No, I don't think this would increase any rivalry.

Mr. MACDONALD. Well, perhaps it would be impossible to increase it. [Laughter.]

Do you think this would have a divisive effect?

Mr. CALHOUN. No, sir, I don't think so at all. Those of us in educational work recognize that there is much more to do in our Nation and in our State and region than we can all do together, and we recognize that some institutions have attributes that others don't have. Whereas one institution will be foremost in a medical program another institution will be foremost in an engineering program.

Mr. MACDONALD. I take it that you feel Texas A. & M. would be foremost in an engineering approach?

Mr. CALHOUN. Well, I don't think that this is a fair conclusion. [Laughter.]

Mr. CALHOUN (continuing). To draw. I think that Texas A. & M. has a very good engineering program but there are other good engineering programs in Texas.

If you are asking me how I would proceed to designate these institutions, say in Texas, I would say that I would prefer to leave that up to the Governor or somebody else who made a good analysis of where the State plan could best be put together. I do not think that is evident at this time.

Mr. MACDONALD. Well, I agree with your conclusion that eventually it will come down to that, but with reference to the bill as now written, don't you feel that if one institution is going to be designated, no matter how self-sacrificing the other institutions might be, the others might feel slighted and therefore not be as cooperative, at least not quite as wholeheartedly?

Mr. CALHOUN. Oh, no, not at all. We don't feel a bit slighted when the University of Texas is designated to receive a program or grants from the Federal Government for a medical program because we realize——

Mr. MACDONALD. Yes, sir, but this is a little different if you follow what I am saying. In this instance, as I read the bill, somebody—a Federal czar as I am sure he would be known in Texas—[laughter]—would look over the educational institutions and say: "I designate institution A," for example, "as the foremost engineering school in Texas, to receive these funds."

Don't you think that this would bring an instinctive reaction from the other eligible institutions in Texas?

Mr. CALHOUN. Well, let me comment on it this way: In the first place I don't read this bill to the effect that a Federal agency would make a determination that a given university is the best engineering university. I hope that it would make a determination that a given university is in the best position to put together this plan and this would call for competence in various stages of engineering, an understanding of what is involved in research, in technology, and an understanding of what the total industrial situation is, and experience in working with industry and in carrying on continuing education courses, so that you would have to make more than an assessment of its engineering quality. You have to make an assessment, I hope, of the institution best qualified to carry on the plan. I think that if this determination were made on a good analytical basis there would be no divisive effects and I am sure that we would all be willing to work for the good of the State in this respect. But frankly, as far as I am concerned, although when it comes down to designating, I am always interested in seeing my institution up there in the front, I am more interested in seeing this job done for the State of Texas. I believe that all of our faculty and our people feel the same way.

Mr. MACDONALD. I hope you are correct. [Laughter.]

Mr. CALHOUN. I think we are.

Mr. MACDONALD. One other question: Yesterday, in discussion with the Secretary and his assistant I asked what a region was and the Secretary said "two States" would be the minimum region. Yet, I read in your statement here that there are 14 regions in Texas.

Now, I know that Texas is a big State, but [laughter] that does not quite jive with what was said yesterday.

Mr. CALHOUN. Well, Mr. Chairman, I think you can get many different definitions of a region. The definition that I gave you is that which I obtained from the people in charge of the economics research program who advised me that one of the Federal agencies has designated 14 economic regions in Texas.

Now I don't know on what basis.

It would seem to me that a region, in the terminology of this bill, will depend upon, particularly, technology. If one looks at technology from one point of view we are a single cohesive nation and technological community today—that is, our technological community is a national technological community at this time without regions.

However, one could look at certain small industries and you will find in a given area you have a group of electronic industries, for example, and in another area one might find a grouping of materials industries or metal-forming industries.

Again, if one is examining the state of the technological art one would have to identify regions differently.

I don't read "regions" in the sense that I would like to consider them as being predetermined by geographical boundaries, but rather determined by technological practices.

Under the terminology that I read in the act "regions" means more than one State but I simply was trying to tell you the problem as I see it in Texas.

Mr. MACDONALD. But you said "about 14 regions."

Mr. CALHOUN. That's right, as I see our problem in Texas.

Mr. MACDONALD. Well, wouldn't the region to include Texas, also be comprised of Oklahoma and the rest of the Southwestern States?

Mr. CALHOUN. Well, it depends.

Mr. MACDONALD. They have problems in common.

Mr. CALHOUN. It depends on what you are talking about.

Now, if we are talking about certain aspects, let us say, of petroleum production, then you might want to talk about the problem in relation to the entire Southwest. If you are talking about another kind of technological problem you might be talking simply about the Permian Basin which is essentially entirely within Texas.

However, If you are talking about another kind of problem having to do with flowing wells you would be talking about the gulf coast.

Mr. MACDONALD. Yes sir; but if you are just talking about petroleum, you would be talking about Saudi Arabia as well as Texas, wouldn't you?

Mr. CALHOUN. It depends on whether you are trying to improve technology as it is practiced and this is the intent of this particular act, as I see it, which is to stimulate the level of technology practice within America so that we will not only be better internally but better competitively speaking externally.

Mr. MACDONALD. Well, I guess that touches the heart of it. So that you feel that the "regional" concept has this as its purpose.

Mr. CALHOUN. Yes. I feel that the regional thing, as I read the bill, or as I interpret it, would mean more than one State. I probably should not have used the word "region" in talking about Texas, but I was simply trying to point out that one of the problems we have in carrying on our program is that to date we have only been able to deal with localized communities and one thing we want to do is deal with the problem on a broader level. We want to get support which we do not now have simply because you cannot pin down anybody who can see it on a "regional" basis.

Mr. MACDONALD. One last question—and I know other members of the committee want to ask you some questions—on page No. 12, you say that you would like to delete the last sentence of section 2(c)(2) so that the Commissioner would not get into the question of accrediting.

Mr. CALHOUN. Yes.

Mr. MACDONALD. As I understand it, you feel that the Commissioner of Education, Mr. Keppel, should not be doing that. But I want to point out this is what is actually being done right now by the professional and scientific groups.

Mr. CALHOUN. That is where I think it should be done but that is not the way I read that sentence.

Mr. MACDONALD. That is what the Secretary said yesterday; that is how it is being done now.

Mr. CALHOUN. Well, the way I read that sentence is that if the Secretary cannot find anybody who does this, then the Commissioner of Education would embark upon that phase; the accreditation, with a national advisory group.

Mr. MACDONALD. Well, I don't think that is correct. I feel this is a very important point, frankly, not just for this committee, but when we bring it to the floor I am sure many of our colleagues will want to comment on it.

Mr. CALHOUN. I don't have the bill in front of me but that is simply in accordance with my own reading of the sentence.

Mr. MACDONALD. Yes; but I think we should have this cleared up so that when you report to Congressman Teague, who is a very illustrious alumnus of your school——

Mr. CALHOUN. Thank you.

Mr. MACDONALD (continuing). That this won't be an issue.

Mr. CALHOUN. I now have the bill, Mr. Chairman, and on page No. 4 the sentence reads:

When the Commissioner determines that there is no nationally recognized accrediting agency or association qualified to accredit such programs, he shall publish a list of institutions he finds qualified after prior evaluation by an advisory committee, composed of persons he determines to be specially qualified to evaluate the training provided under such programs.

Mr. MACDONALD. Right.

Mr. CALHOUN. Now, this to me indicates that under certain conditions the Commissioner of Education would set up an Evaluation on Accrediting Committee, or whatever it might be.

Mr. MACDONALD. No, sir.

Mr. CALHOUN. That would have to go through the process.

Mr. MACDONALD. You are wrong.

Mr. CALHOUN. Well, OK. I am glad.

Mr. MACDONALD. I hope that you agree with me that you are wrong about it because it says "when the Commissioner determines that there is no nationally recognized accrediting agency" and of course that was already settled at the hearing yesterday when it was brought out that there were two engineering groups and also a business administration group.

Mr. CALHOUN. And of course there is the National Commission on Accrediting which looks at the whole accrediting activity.

Mr. MACDONALD. Well, wouldn't that take care of your objection then?

Mr. CALHOUN. Well, sir, the only point I want to make is this: If there is a nationally recognized accrediting agency or agencies, then this sentence has no meaning.

Mr. MACDONALD. Well, you are the expert in this field and I am asking you, because my knowledge in this particular area is basically limited to the testimony that was presented at the hearing yesterday.

Mr. CALHOUN. Well, there are accrediting agencies.

Mr. MACDONALD. In engineering?

Mr. CALHOUN. Yes, sir; the Engineers Council for Professional Development.

Mr. MACDONALD. Right.

Mr. CALHOUN. And there is also an accrediting agency for business programs.

Mr. MACDONALD. Right.

Mr. CALHOUN. And there is an accrediting agency for veterinary medicine, and for architecture, and so on. There are a whole lot of them.

Mr. MACDONALD. Right. And from the fact that these are already in existence, would that not cover your objection?

Mr. CALHOUN. I hope it would cover it, but there is the sentence in here and it says that under certain conditions the Commissioner of Education could set up an evaluation team. At least, that is the way I read it. Now, if I am assured that the Commissioner of Education will not get into the accrediting function then I am very happy, but all I see is the words in front of me. That was all I was reading—the words of the act.

Mr. MACDONALD. But the language on page 4 says that “where there is no nationally recognized accrediting agency” and in the two instances that you have brought up there are.

Mr. CALHOUN. Let us make my point clear.

Mr. MACDONALD. Yes.

Mr. CALHOUN. Whether there is or there is not, in my opinion I don't believe the Commissioner of Education should get into the evaluation or accrediting of programs and it seems to me this provides an opportunity for the Commissioner of Education to embark upon evaluation. I see no reason for it to be put in the act.

Mr. MACDONALD. Oh, yes sir, only in the absence of such an agency—

Mr. CALHOUN. Well I don't believe there is any absence. I believe it is covered.

Mr. MACDONALD. Well then, you withdraw your objection?

Mr. CALHOUN. Well, this sentence has no meaning. Either the sentence has no meaning, that is, it is not required to be in there because it is covered, or there is some aspect that is not covered and the Commissioner of Education will get into the accrediting.

Mr. MACDONALD. I don't follow you.

Mr. CALHOUN. Well, either accrediting is covered by other agencies or it is not covered. If it is covered then there is no point having that sentence in there. There is no need for it.

Mr. MACDONALD. Well, just say for example that there was an internal dispute in the Engineering Accrediting Agency and they dissolved themselves.

Mr. CALHOUN. All right, let's just suppose for the sake of argument that happens.

Mr. MACDONALD. This language would then cover it, would it not?

Mr. CALHOUN. Well, I won't press the point. But the way I read it, it seems to me that it would bring the Commissioner of education into the accrediting function.

If I am assured that this is not so and that the Commissioner of Education would not intend, or that the Department of Commerce would not intend anything of the sort, and that is not the way it should be interpreted here, then I am happy.

Mr. MACDONALD. It isn't, though. I am happy with you. [Laughter.] But the point is that it doesn't matter what your feelings are or my feelings—

Mr. CALHOUN. Right.

Mr. MACDONALD (continuing). If it is written into the law.

Mr. CALHOUN. Right.

Mr. MACDONALD. But you are protected here, and I would like to be sure that you will not go away to alert the Texas delegation, which is one of our largest in the Congress, that there is some sort of Federal control as to who would be accredited or not accredited.

We recognize that in the field of such specialists as engineering or business administration the people who do accrediting have done a fine job, and I am sure it is not the intent of those here or in the Congress as a whole to try to change that.

Mr. CALHOUN. I am pleased to know it is not the intent of this bill through that sentence to bring the Commissioner of Education into accreditation.

Mr. MACDONALD. But I don't want to go too far. I say that I believe, and I did not introduce the bill, but I believe that this sentence was introduced to cover any contingency if the association that does the accrediting for some reason, and let us hope that this does not arise, no longer could handle it.

Mr. CALHOUN. Well, let us hope that no such contingency develops.

Mr. MACDONALD. Excuse me?

Mr. CALHOUN. Let us hope no such contingency develops.

Mr. MACDONALD. Yes. Are there any questions from any of the other members?

Mr. HUOT. There was a point brought out yesterday and I believe it was discussed to some extent earlier. That is your fourth point that the designation should be a little more specific.

Now how would you feel about the agency of the State rather than the learning institutions—an agency like research and development?

Mr. CALHOUN. It is my personal opinion that the educational institutions are in the best position to put together these plans. I think they have the maximum knowledge as to what is the state of technology, as to what the directions of technology are and how they develop and as to what the procedures and methods should be that will best solve the problems. I believe that this State plan is more properly in the field of the educational institution than of any State agency.

Mr. HUOT. I would agree with that except that it was brought out that where there might be competition in a State it might solve the problem.

I am, however, concerned over the accreditation and the section that you were speaking about, No. 4, is only a protection sentence but on page 3, at the bottom, from line 21 on, there seems to be no problem where the accreditation agencies exist so this sentence that you are concerned about would not seem that it would have any occasion to be used except in the case of an emergency or some contingency such as has been referred to.

Mr. CALHOUN. I am willing to take the chairman's interpretation of that.

Mr. HUOT. We were so assured by the statement of the Secretary.

Mr. CALHOUN. Thank you.

Mr. HUOT. That is all, Mr. Chairman.

Mr. FARNSLEY. No questions, Mr. Chairman.

Mr. MACDONALD. Thank you very much.

The next witness is Mr. Sidney T. Maunder, visiting lecturer from the University of Massachusetts at Amherst, Mass. Before you begin, Mr. Maunder, I would like to say that we welcome you here.

Mr. MAUNDER. Thank you.

Mr. MACDONALD. Your reputation has preceded you.

Congressman Conte who introduced a similar bill has discussed the situation with me and has said that you were coming, informing me of your background. We are very happy to have you here.

Mr. MAUNDER. Thank you very much, Mr. Chairman.

**STATEMENT OF SYDNEY T. MAUNDER, ELECTRICAL ENGINEER,
VISITING LECTURER IN ELECTRICAL ENGINEERING, UNIVER-
SITY OF MASSACHUSETTS, AMHERST, MASS.**

Mr. MAUNDER. In introducing myself I would like to say that I am going to speak from different aspects from those heretofore. In general, I am going to speak about the subjects covered in my prepared statement.

I have been in General Electric, a large industry, for almost a lifetime. I was manager of engineering of a General Electric plant and I have designed and my engineering section has designed many pieces of electrical and electronic equipment and, as such, I have recognized the speed with which we can get the newest technical information.

Now that I have retired from General Electric and am a visiting professor at the University of Massachusetts, I see the slowness with which technical information gets into the hands of industry and into the final product.

Also, I speak to you today as a man who has talked with many industrialists in the Commonwealth of Massachusetts, from the big industries to the little companies of which the former man spoke, and I recognize many of their problems.

I speak to you in favor of this act and I ask your careful attention to it and your support of it.

This act will provide communication channels, faster communication channels, into the hands of, as I see it, the people who are able to use that information in the final product.

In the text that I have given you I use very homely and out-of-date illustrations. I particularly have one in mind. A little homely because you and I can understand it. Mother had a paring knife and it had a wooden handle. It was held on with two rivets; it was a wonderful tool. About 40 years ago, through the advent of plastic, we saw the paring knife come out with a plastic handle and it was a failure initially. It melted in hot water. Maybe my mother or my wife used hotter water than they should have, but here was a poor manufacturer changing from the wooden handle to the plastic handle. He thought he had made a step forward, but he made a step backward. Now, it took some time before they had corrected the trouble with the plastic handle.

I use that homely illustration because in most of our products there are many little items that go to make up the total product and if anything goes wrong in any element of that total product the product is no good.

As I state later in my text, there is a changing process and I also want to speak of this in a homely manner: I am going to talk about the painting of the product.

Most products except glass have to be painted for acceptance as a final product. How can this product be improved in a painting procedure? Well, obviously, we have gone away from the brush; we have gone to dipping or spraying. There is flow painting; there is electrostatic painting and with each of these new processes there are different elements. Which of these new processes shall we use in the product to improve it, to lower the cost, to make it more useful? Can we change the material at the same time that we change the process? Now, this is just one little process that I am speaking about but it is illustrative of many processes that go into making up the product.

At one time, in making electronic gear I had trouble with paint which I think illustrates this point very well so I put it in the text. The paint came off, flaked off some electronic gear. What was wrong? Didn't we degrease the unit before painting? Did we use the wrong element in the paint? Had we not dried it well enough? All these things were considered—what of the combination of things had gone wrong? Being a big organization we called in our next higher level which was a paint expert by career and he came down and he could not find out what was the trouble. But he went to the vendor's plant and they worked a day or two together and solved the difficulty.

How can this same thing be accomplished in a small company? How can they get technical help instantly? How can they get technical help in depth when it is needed? How can they get information from the people who know about this paint in my illustration and its application?

The next area I am going to talk about is "new products." As we read the financial reports of many, many manufacturing companies, the president or the chairman of the board is most happy to point out that 27 percent of the products the company is now making were not available 10 years ago. In other words, through science they have developed new products and because of technology, ability, and marketing skills these new products are available to the public which were not available to the public a decade or more ago.

How can we help in the development of new products?

Well, this goes to the area of technological climate.

I want to spend just a minute or two talking about technical climate because unless you understand it then you will not understand its implications.

Mr. Chairman, you and the former speaker were talking about a small community of an engineer or two; such engineers are in a technical climate all by themselves. Such a man has no one to talk to except, as was pointed out, at a regional meeting, perhaps, and I am using the wrong word here, but a regional technical meeting having technical climate which is the climate where engineers and physicists and scientists like to work. This is where they can get further education, where programs are provided in technical schools and where they can advance and improve their technical competence; and perhaps programs which lead to a doctor's degree may be undertaken.

This is the climate where there is rapport with other engineers.

Now, if you are an engineer in a small community, who can you talk to except yourself, and be in a technical sphere or in a technical-brotherhood basis? Rapport with other engineers helps to stimulate progress among each other.

Of course a technical climate is often made better by research facilities. If you are an engineer in a small plant and you have certain research facilities you may want at times bigger equipment which is not available to you but if one of your brother engineers in the same community and in a different plant has that facility there will be an exchange of uses of this equipment and of the art so that this makes a terrific technical climate. It is one thing that breeds new ideas—it breeds new products; it breeds a situation where the engineer will want to stay in that community and other industries may move into that community because they see it has a good technical climate.

It is one where, as you see a product, then you see a second level of the product, or another element of it that has never been developed and so a new industry may be born out of this technical climate.

Now here we have some of the things within the scope of the Small Business Administration, I realize, but new industries must be helped through the incubation period.

The industrialist will have a terrific community in which to produce a new product that he knows will sell in the millions across the country. He may have a lack of certain things and some of the small companies fail, to our regret, so how can the channels be kept open so that they may be helped before they reach a period where they are going to fail and so that the channels of communication between the education centers of the universities and industry can help them in this regard.

Mr. Chairman and gentlemen, I speak for several kinds of small industries and manufacturers of products; I speak for the University of Massachusetts in asking for support of this bill; I speak for myself as a citizen and a former man in industry.

I ask for your support.

Mr. MACDONALD. Thank you very much, Mr. Maunder.

(The prepared statement of Mr. Maunder follows:)

REMARKS BY SYDNEY T. MAUNDER, E.E., VISITING LECTURER IN ELECTRICAL ENGINEERING AT UNIVERSITY OF MASSACHUSETTS, AMHERST, MASS., JUNE 2, 1965

Gentlemen, I come before you to speak for H.R. 3420. I speak based on a varied background:

(a) I was manager of engineering of a General Electric plant and thus saw the speedy flow of technical knowledge in a large industrial company.

(b) I have talked with many industrialists, both of large and small companies, in the Commonwealth of Massachusetts and thus can relate some of their problems and tell you how the passage of this act would improve their operation.

(c) As an engineering professor, I see available technical information that is not being used to the fullest by industry.

Passage of this act will provide communication channels for the quick flow of technical information into local hands. These channels in some States are not now available. This bill will provide an impetus to the States to set up these channels. Specifically, I see the need for industrial seminars, workshops, demonstrations, and extension courses.

While the above are lecture-student relationships, yet there are other services in the reference area that should likewise be enlarged: Technical libraries, library searches, reports, microfilms, and information centers.

Let us look at several industrial situations and observe what could be accomplished if the entire country were set up under this act.

IMPROVE THE PRODUCT

To keep abreast of the market, each manufacturer must be constantly improving his product. What we are now making is constantly being made obsolete or non-competitive by advancing technologies. If the newer technologies are not made available to our industries, our products and businesses will slowly die. As an example, you and I have witnessed the advent of the stainless steel razor blade. This would have caused a loss of business if Gillette had not aggressively attacked the technical problems related to this innovation. So if a competitor makes an improvement and we do not, then the competitor will gain an important commercial advantage over us.

LOWER THE PRODUCT COST

Each aggressive manufacturer is striving not only for an improved product, but also for lower cost. Here I shall limit my discussion to the lowering of costs by product design change or change in material. Each element in the design of the product must be studied to see if new and lower cost materials cannot be used. If the product were a kitchen paring knife with the traditional wooden handle riveted in place, we would consider whether the handle could not be changed to a molded plastic handle. Will this handle warp in hot water? Will it be as sturdy as the ones our mothers used? Will it sell?

Extensive knowledge of the plastic materials and vendors is necessary to assure that the departure from the old to the new will be a reduction in cost without a sacrifice of product quality or impairment of sales appeal. Here is an area where experience of others who are experts is not only most helpful, but essential.

Further, it is recognized that when the costs are reduced, the product becomes more available to more people and, thus, the unit volume will increase.

IMPROVED PROCESSES

Changes in the manufacturing processes can, likewise, make an important improvement in the product or a reduction in the cost or a reduction in the manufacturing cycle. Consider a crude illustration: the painting of the final item. How can this be done quicker? Are ovens required for baking to speed up the manufacturing cycle, or can the product be air-dried? What new paint materials and technology will provide a chance to use a new process? Shall we air-dry, dip, or flow paint? What new modes of paint application are now developed that are practical and applicable to our product?

In this illustration, an industrywide workshop might be the best mode of conveying new solutions to old problems which are common to many companies.

NEW PRODUCTS

Some industries in their annual reports state that 30 to 50 percent of the production they are now making were not on the market 20 years ago. Our industries likewise can conceive of new products and how to make them if the technical climate is conducive toward such inventions. This climate is achieved if the men of the industry can be kept abreast of the latest technologies and of scientific discoveries which they might apply toward new products so that they might devise such new items.

As science advances, there are always new products coming into being. One must become aware of those products that fit into his own manufacturing or marketing pattern. Here is a place where a university can early point out the need for a new product to a specific manufacturer whose tools and skills fit this new item.

INDUSTRIES THAT ARE DYING

You have observed, personally, the death of many firms in your own area.

A textile firm, successful for 50 years, closed its doors because of antiquated machines, low prices, foreign competitors, the public desire for materials other than traditional woods, and higher labor costs. A papermaking plant closed because the machinery was antiquated; the building was too small for new machinery and the management misjudged the market.

If technical help had been available to the managements of either of these firms earlier, it is conceivable that they might not have closed their doors.

NEW INDUSTRIES

In the general case, a small group of people had an idea for a new product or service and started a company; but shortly thereafter, they had troubles which were due to some of these weaknesses:

- (a) Too little financing.
- (b) Unbalanced, technical, managerial, or entrepreneurial talents. it is recognized that if one element is weak or missing, success is difficult to attain.
- (c) Unwise service or production (it did not meet a need).
- (d) Immature use of funds and manpower.
- (e) Change in the competitive situation.
- (f) Product not fully developed.
- (g) Bad unbalance of raw materials or parts.
- (h) Marketing difficulties.

To help solve many of these difficulties, the new business had no one to turn to. Private consulting service is not available to help them; because, usually, the small firm has no funds to spend. However, as incipient new businesses, each State should do all it can to get them through their early times and troubles. Here free services from the campus should be made easily available to aid and guide them.

SMALL INDUSTRIES

In the Commonwealth of Massachusetts are 8,800 small industries, and most of these are profitable. In this group, business is good and increasing each year. Profit is fine, cash flow excellent and their aggressive management believes that it is on top of the competitive situation and that the plant has kept pace with technical improvements in machines, processes, and materials.

But often this is not the case, for management in its prosperity has been too smug and may have overlooked some aspects of the business; or in some instances, they need technical help which they cannot find and are unable to hire. Let me illustrate an imaginary case:

Parts of a product were glued together. The manufacturer depended on the vendors of the adhesive to supply that which would do the job best. However, to his dismay he found that his competitor's product was better because of a superior adhesive. To whom could he turn to for knowledge, in depth on adhesives, their application, and use? Research to find a better adhesive would take too long and cost too much. However, if there were an adhesive expert available to recommend a solution, their problem could be readily solved. Where is that expert to be found?

Small businesses are the backbone of our economy. We must do all possible to help them grow.

GOOD TECHNICAL CLIMATE

First, let me define "good technical climate." It is a small area where engineers, physicists and other technical people like to work because it presents specific advantages to them:

- (a) Further education. A good university with a top-grade college of engineering is a logical center of this area. It must provide evening courses leading perhaps to a doctor's degree.
- (b) Rapport with other engineers and technical people. This gives a stimulus between friends toward solution of problems and creation of new ideas or patents. These friends might not even be in the same companies.
- (c) Information centers on new processes or materials.
- (d) Research facilities over and beyond the scope of those in their own company.

If there is such an area of good technical climate, then this is likewise an area of stimulating technical growth; an area which does not lose its technical people; an area producing goods having a high technical content; and finally, an area of high economic growth.

Such an area, furthermore, will attract new industries and, likewise, will tend to keep the present industries from moving away.

OTHER WORLD AREAS

Some areas of the world and some States have learned how to use the new technologies effectively. They provide most formidable competition to those areas

where the use of technology is the least. Some States already have modest programs similar to that in this bill and some of these areas are already showing good economic growth.

ECONOMIC BENEFITS

This act will be a stimulus on each State legislature so that manpower can be made available to provide a proper channel of communication between the campus and industry. This in turn will provide improvement in the product and service so that the economic growth is advanced. As our product improves and our costs are lowered, our world competitive position will be improved.

CONCLUSION

The University of Massachusetts has already recognized the technical problem existing and has already committed some funds toward the end of helping the industries and thus lift our economic level. We are willing to increase this commitment.

As the designated spokesman for the University of Massachusetts on this act, I ask for your active support of this bill. Further, as a man from industry and from the faculty who has studied this act and its implications, I likewise ask your passage of this act.

Mr. MACDONALD: Any questions of Mr. Maunder?

Thank you very much, sir.

Our next speaker is Chancellor John T. Caldwell, of North Carolina State University, and I think he is accompanied by Dr. Brice Ratchford, dean of the University Extension, University of Missouri.

Mr. CALDWELL. Yes, sir; and two other persons.

Mr. MACDONALD. And Dr. J. Whitney Bunting, dean of the College of Business Administration, University of Georgia.

Mr. CALDWELL. He is not here.

Mr. MACDONALD. And Dr. Robert N. Faiman, dean of the College of Technology, University of New Hampshire?

Mr. CALDWELL. Yes, sir; that's right. And Dr. D. Mack Easton, dean of the Extension Division of the University of Colorado.

Mr. MACDONALD. Doctor Easton is here?

Mr. CALDWELL. Yes, sir.

Mr. MACDONALD. Is Dr. Barton A. Westerlund here with you?

Mr. CALDWELL. No; he is not here this morning.

Mr. MACDONALD. Would you all come forward. Is this going to be a joint presentation?

Mr. CALDWELL. Well, I am going to give the testimony and the other gentlemen will join me in answering the difficult questions that you may have. [Laughter.]

Mr. MACDONALD. You certainly have very wonderful geographical distribution.

Mr. CALDWELL. Yes, we do, New Hampshire, North Carolina, Missouri, and Colorado—that is pretty good.

Mr. MACDONALD. Right. You are all very welcome here this morning.

Mr. CALDWELL. And Mr. Chris Arnold, who is associate executive assistant for the Society of Land Grant Colleges, is also here.

Mr. MACDONALD. I would be happy to have him step up.

Mr. CALDWELL. Thank you.

STATEMENT OF CHANCELLOR JOHN T. CALDWELL, NORTH CAROLINA STATE UNIVERSITY; ACCOMPANIED BY DR. BRICE RATCHFORD, DEAN OF THE UNIVERSITY EXTENSION, UNIVERSITY OF MISSOURI; DR. ROBERT N. FAIMAN, DEAN OF THE COLLEGE OF TECHNOLOGY, UNIVERSITY OF NEW HAMPSHIRE; DR. D. MACK EASTON, DEAN OF THE EXTENSION DIVISION OF THE UNIVERSITY OF COLORADO; AND CHRIS ARNOLD, ASSOCIATE EXECUTIVE ASSISTANT FOR THE SOCIETY OF LAND GRANT COLLEGES

Mr. CALDWELL. I am John T. Caldwell, chancellor of the North Carolina State University at Raleigh, N.C. I am here today to present testimony on behalf of H.R. 3420, the Technical Services Act of 1965, on behalf of the National Association of State Universities and Land-Grant Colleges. This association has a membership of 97 major universities and colleges, at least one of which is located in each State and in Puerto Rico. As of last fall the total membership, all but two, being publicly controlled institutions, had a combined enrollment of 1,400,000 students, which is about 28 percent of the total enrollment in all American institutions of higher education. At the graduate level we grant more than 55 percent of all doctoral degrees.

The institutions I represent here today, Mr. Chairman, have for many years been interested in and concerned about the type of program that the Department of Commerce hopes to organize under the Technical Services Act of 1965. We very much appreciate therefore this opportunity to discuss with the members of this committee the proposed legislation.

Our interest in this type of program stems basically from the early acceptance by America's public universities of the ideal of faithful service to the needs of their communities and the Nation. It is in this insistence on the ideal of service that we can understand Justin Morrill's inclusion of the word "practical" and the famous phrase that he wrote into the act of 1862 which established the land-grant institutions over a hundred years ago:

* * * in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life.

The public universities were to be useful institutions, useful to the people, to the States, and to the Nation.

That this concept of usefulness was to be extended beyond the campus and the classic disciplines, that is the ivy curtain between town and gown was to be torn down, was seen early in pioneering programs for agricultural research and extension. This priority was a logical choice for a country in which some three-fourths of the people were engaged in farming.

You will recall that the land-grant college act provided that there should be in each State a university the main point of which was to teach agriculture and the mechanical arts as we call them today.

The pioneering attempts of individual professors in individual institutions were formalized on a national level in 1887 with the passage of the Hatch Act for agricultural research and in 1914 with the passage of the Smith-Lever Act for agricultural extension.

I do not need to dwell on the effect of these programs on the economy and life of our country before this committee. By any measure, they furnish one of the greatest success stories of all times. Of all the details that could be cited in support of this statement, one seems to be able to summarize all the others by this particular statement: our farm population today totals just about the same as it did 100 years ago. In 1863 those farmers fed a population of a little more than 30 million people. Today they feed about 180 million—6 times as many—well enough to make weight control a necessary national preoccupation [laughter]. And I should add “surpluses.”

Evaluated solely in the release of produced energies for other pursuits, these programs surely add up to the best investment our country has ever made. It also adds up to a measurable increase in productive efficiency greater than that achieved in other areas of the American economy.

The public institutions early attempted to extend these types of programs and services to other important areas of the national economy, and especially to those areas involving engineering and the industrial arts, within the limits of the available resources.

By 1914, 12 of these institutions had established engineering experiment stations and engineering extension services had been organized in many of them on an informal basis, as no funds were available. In 1905, as a result of insistent requests from small manufacturers for help, the first of several unsuccessful attempts to obtain Federal help for such programs was made with the McKinley bill calling for engineering experiment stations, following the pattern of the Hatch Act, for the agricultural experiment stations.

Despite inadequate financing, these early attempts at the local level, produced important results. Starting as early as 1894, a ceramic industry was started in Ohio as a result of pioneering efforts by Ohio State. North Carolina State achieved the same results a few years later in North Carolina. Penn State had organized industrial extension programs by 1907, including the public relations for industrial employees and industrial economics for company officials.

Efforts to obtain Federal help continued through the Newlands bill in 1915, the Smith-Howard bill in 1917, the McNary bill in 1929, the Arentz and Haugen bills in the 1930's and bills by Representative Green, Senator Mead, and others in the 1940's. Throughout the debates on these attempts, everyone agreed to the need, which was well expressed in 1950 by H. Thomas Hallowell, then vice president, now president of the Standard Pressed Steel Co., of Jenkintown, Pa. Mr. Hallowell said:

Programs such as the ones offered by the land-grant colleges and universities can help industry improve its competitive position by improving its ability to produce * * * This ability to produce is industry's one control of inflation.

and so on.

Despite the almost universal agreement of need, no action was taken at the Federal level for reasons that had nothing to do with either the need or the value of the legislation.

The success of the programs in agriculture does give some hint of the progress that might have been made if one of them had been enacted into law.

There are several new factors intensifying the need for the Technical Services Act of 1965. It has been stated to you many times and I do not need to dwell on it, but we should remember the great burst of new knowledge that is coming forth from the enormous input of Federal moneys into research in many areas of knowledge and not only as a result of Federal effort but by some State effort. Dr. Calhoun spoke of this earlier and very few of the results of the publicly supported research can be picked up and applied directly to an industry or a company. There has to be a conversion process.

Second, American products must increasingly compete in domestic and world markets with products from foreign companies and we know that West Germany, Japan and several other countries have a highly advanced technological society and are spending large sums of money to insure continued top technological performance. A very modest expenditure in this country might have great results.

Thirdly, research and development have increasingly gone large-scale. Big industries can do their own, or most of it, but small industries cannot.

The universities are in a better position to take on this important assignment than ever before. I say this of my own institution and it is true of those all over the country. Over the years, the universities have gradually intensified their relationships with the professions and with industry and, at an increasing rate, in the last few years. Most of our member institutions have continuing extension programs in either engineering and technology or in business management, and many have programs in both. All of our institutions have expressed interest, and feel there is a need for sharply expanded extension programs in these fields and are ready to move forward as funds become available. May I add that I think we work together very effectively, but we would respond more specifically if you would like us to do so, Mr. Chairman, to the question that you asked earlier of Mr. Calhoun.

The existing programs have yielded hundreds of examples showing how entire industries and individual firms have been assisted in expanding, solving problems and in increasing profits through educational programs. While the existing programs are accomplishing much, they are seriously inadequate. They are inadequately supported and dependent upon fees.

The second difficulty with such programs is their uncertainty.

Uncertainty which stems from their uncertain financial basis. You cannot employ top-level people, able people, to perform the services with an inadequate budget. The Federal support, plus matching local appropriations, would provide a solid basis for developing a significant and meaningful program. We have several institutions represented here today, Mr. Chairman, and you have already heard examples of what can be done. We would be happy to expand on this if you like.

By virtue of the funds provided under this act being channeled through colleges and universities, it is assured that the program will be largely locally controlled. Within the broad framework of the act as before you, colleges and universities which are qualified to participate are free to develop with the industry which is important in their area programs of value and significance. The integrity of the institutions is in no way impaired or compromised. We looked for this possible impairment in the legislation but we find that it is not there.

Most universities have advisory committees for their several extension programs. With our own industrial expansion program we have an advisory committee of 15 persons with some rotating membership representing many segments of industry in North Carolina. They meet quarterly to review what is going on and make suggestions as to what is needed and where we could put our efforts the next year and in general give us a review of our programs and some advice.

The combination of university sovereignty, local advisory committees, and involvement of the industries in planning programs that will affect them provide the necessary safeguards not only for keeping the program locally based and controlled, but also sound and in the public interest.

An effective educational program to increase the level of technology will require people from several fields. In addition to different types of technologists, management specialists must be fully involved and this legislation recognizes that. Management of a firm may not need to know the details of new technology, but it must understand what it will do for the firm and the method of making use of the technology at minimum cost and for maximum benefit.

The types of technological and management personnel needed varies from industry to industry, and, obviously, can include many different specialists. Our faculty does include many such different specialists. Our faculty does include many such different specialists. Increasingly faculty members have appointments which provide for spending part time at teaching and part time at either organized research or extension work, or both. These arrangements often vary from year to year or may be changed even during the year. This provides the flexibility within the university to assemble whatever team of specialists is needed for a particular program for as long as they are needed.

Now for some specific comments on the act, itself.

Representatives of our association, gentlemen, served on a task force which was assembled by the Department of Commerce more than 2 years ago to begin exploring the idea of this Technical Services Act.

Our association has had its own committee for the last year and one half to advise with the Department of Commerce on the design of this program. Many of the suggestions which we have offered have been included in the act. While no bill is ever entirely satisfactory to one group, we think it is an excellent act and in the interest of the national economy and the universities and should be passed.

There are several features in the act which have particular merit. It is so written that all of the institutions of higher education which have real competence to assist industry can participate in the program. At the same time, it provides a framework for administration within the State, which will avoid duplication and should pool the knowledge resources of the State toward the common objective of improving the level of technology of industry in the State.

Another outstanding feature is permitting institutions in more than one State to cooperate and have their allocation of funds increased by 10 percent. This fits into the regional question which was spoken about earlier. In many parts of the country it will be desirable for institutions of higher education in two or more States to cooperate and this act provides an excellent incentive for them to do so. As I

see it, the word "region" is used in two sections of the bill, in the statement of purpose in the earlier part of it, in section No. 2, where it defines the purposes of the act and technical services, is said to mean activities or programs designed to enable businesses and industries to acquire and to use scientific and engineering information more effectively through such means as:

(1) Analyzing problems of regions and industries to determine new opportunities for applying technology and, (2) preparing and disseminating technical reports, abstracts, computer tapes, microfilm, reviews and similar scientific or engineering information, including the establishment of State or regional technical information centers for this purpose.

Then it is used again over in section 7, "regional or interstate programs" and I assume that it is referring specifically to programs that might serve the community like Kansas City which is in two States served by Kansas State University and the University of Missouri and so it might reach into other parts of the metropolitan community. I find no real ambiguity in the use of the term.

While the majority of the funds will be allocated under a formula to be developed by the Secretary of Commerce, 20 percent of the total appropriation is reserved for the Secretary to make grants for experimental and national programs.

This provides flexibility while at the same time providing a strong continuing base of support for the colleges and universities. This is good.

We urge you to pass this act and to fund it. The universities I represent will continue to do all they can within the limits of their resources. They ask your support for this program so they can change this to read "within the limits of their competence with adequate resources."

Mr. Chairman, we are very pleased to respond to any questions that you or any member of the committee may have.

Mr. MACDONALD. Thank you very much, Chancellor. Actually, I say, without the usual protocol of complimenting witnesses which is pro forma, this is an excellent statement and one that I have looked forward to because it does set out the association position very clearly and straightforwardly.

I just have a couple of questions and the first one is: Do you think this program should be restricted just to land-grant colleges?

Mr. CALDWELL. No, sir.

Mr. MACDONALD. Why do you say that?

Mr. CALDWELL. Let me make sure that you and I understand each other on this matter of land-grant colleges.

Mr. MACDONALD. Yes.

Mr. CALDWELL. The bill as now written provides that these be located in a university or, as an alternative—and I presume that this means if the Governor or somebody at the State wants to present its program on a different basis—then it would have to justify using some other type of public agency, such as a nonprofit agency.

I think it ought to be in the universities. In the United States we have in every State in the Union at least one State university and at least one land-grant university in the technical sense of having been established under the authority and the sections of the Land-Grant College Act of 1862 and some of the States they are the one and the same university. The University of Wisconsin, for example,

is the State's land-grant university. The University of Massachusetts I am reminded is the State's land-grant university there although MIT——

Mr. MACDONALD. Right, Harvard—incidentally, MIT is a land-grant college I found out yesterday.

Mr. CALDWELL. That's right; it is a land-grant university, yes.

Mr. MACDONALD. But Harvard College University is not.

Mr. CALDWELL. No, not in the sense of this term "land-grant university."

The term "land-grant university" derives from the act of 1862 wherein the Congress of the United States furnished to every State 30,000 acres of Federal land for every Senator and Representative it then had entered in the Congress of the United States. If they had two Senators and three Representatives then the State got 150,000 acres of land which they could sell at \$1.25 per acre which they would convert in a permanent endowment. [Laughter.]

Mr. MACDONALD. I knew that the Congress had some good purpose. [Laughter.]

Mr. CALDWELL. There was to be at least one college to teach agriculture and the mechanical arts—this was the land-grant college of 1862. There have been, historically, seminary grants in earlier days through Federal funds and there was the Northwest Ordinance of 1787 where there had been some Federal funds committed to education.

Mr. MACDONALD. Yes, sir; but what I was concerned with was whether you felt there should be research to land-grant colleges.

Mr. CALDWELL. No, sir.

Mr. MACDONALD. Under this language—you do not?

Mr. CALDWELL. No, sir. If you will look at it, you have two types of institutions—under 2-b regarding the "designated" institutions, meaning the institutional agency in each participating State which has been designated as administrator of the program for each State under section 2——

Mr. MACDONALD. So as you read the bill, you say that is not so.

Mr. CALDWELL. No, sir. In Texas, for example, it could be decided that the University of Texas was going to be the agent or Texas A. & M. was going to be the agency.

Mr. HUOT. The only restriction should be that it would have a degree in engineering and a degree in business administration.

Mr. CALDWELL. It should include those, yes, qualified institutions.

Mr. MACDONALD. Then I have been beating a dead horse because I spoke for a day or so about just that.

My second question, and perhaps my last one, is on page 8——

Mr. CALDWELL. May I just interrupt for a moment, Mr. Chairman, before we leave that.

Mr. MACDONALD. Yes.

Mr. CALDWELL. If you will read section 3 in this act it says that any State which wishes to receive Federal payment under this act in support of its existing or planned technical services and programs shall designate under appropriate State laws and regulations an institution or agency to administer and coordinate that program and to prepare and submit plans and programs to the Secretary of Commerce for approval under this act.

Now, the institutional agency designated by a State must be "a State university" or "land-grant college entitled to the benefits under the act approved July 2, 1962"—they are not synonymous. This is an either/or provision.

Mr. MACDONALD. And/or.

Mr. CALDWELL. That is and/or. [Laughter.]

Mr. MACDONALD. I see we have a lawyer present.

Mr. CALDWELL. Right, right. But that decision would have to be made within the State, as to whether it would go to one of the universities or the other. For example, take Oklahoma, where you have Oklahoma State University and the University of Oklahoma and in Mississippi you have Mississippi State and the University of Mississippi. These are separate, and the decision would have to be made at the State level, then submitted to the Secretary of Commerce as to which one would be designated to administer these funds. I assume that this would mean that it would be a local decision as long as the institutions complied with the terms of the act, and the Secretary of Commerce would be able to accept recommendations and in fact obliged to do so.

Dean RATCHFORD. But there is a difference.

Mr. MACDONALD. Would you identify yourself, please sir?

Dean RATCHFORD. Yes, I am C. Brice Ratchford, Dean of the university extension, University of Missouri. A number of institutions could be qualified and the qualified institution may get a larger share of the money than the designated one. What I mean is this: the only advantage the designated one would have would be that they had to do the planning and for that they would get \$25,000 which wouldn't cover it. [Laughter.]

That would be to administer the planning and it would be either public or private institution but any one qualified could participate fully in the on-going program, any qualified institution.

The only advantage of the designated institution is that they are going to have to take on a bigger responsibility for which they get \$25,000.

Mr. MACDONALD. And some very favorable publicity, no doubt.

Dean RATCHFORD. Well, that may be or maybe not. I think a point was made on that recently.

Mr. CALDWELL. And some control.

Dean RATCHFORD. The point that was made earlier in respect of higher education institutions. I think somebody mentioned earlier there is no difficulty in getting them to work together among the academic people even though on football days it might not appear to be that way but we do exchange students and semesters and professors.

Mr. MACDONALD. Yes, I understand that. It was also pointed out yesterday, and I don't know if any of you gentlemen were here, but there has been some difficulty among some distinguished colleges in and around the Boston area in regard to their medical program, and they are having a great hassle which is in the front pages of the Boston newspapers.

Mr. CALDWELL. Yes.

Mr. MACDONALD. And I quote—as to control the Boston City Hospital because Harvard University and Boston University and I believe Tufts University—

Mr. CALDWELL. Yes, Tufts.

Mr. MACDONALD (continuing). Use the facilities at the medical school to train their medical students at the Boston City Hospital and I am ashamed to admit it but I know it is the fact, each one is vying for position so that their own personal choice would be in charge of the program and the other two schools would have to come under that man who is designated to be in charge.

I thought that the language of this bill perhaps might lead to the same situation. That is what I wanted to get your opinion on.

Dean RATCHFORD. There may be difficulties, but the alternative universities getting together versus the State agency which is not educationally oriented and does not have the competence in this particular broad range that is needed, is the main point and I think if you presented these alternatives unanimously they would say: "Let us work it out."

Mr. MACDONALD. Well, you mentioned, Dean, that the designated institution receives only \$25,000. Is that factual?

Dean RATCHFORD. That is in the bill for the designated agency.

Mr. MACDONALD. Well, are there no fringe benefits that might accrue?

Dean RATCHFORD. No sir, no sir—that is the only fringe benefit. The rest of it would be developing programs in the institutions that are best equipped to handle it and then that would be on the basis of merit but the only fringe benefit for the designated university would be this one and, as I say, it would not cover the cost.

Mr. MACDONALD. Well that brings me to the question that I was going to ask you next, Chancellor.

Mr. CALDWELL. Yes, sir?

Mr. MACDONALD. You state on page 8 of your statement that you think this is an excellent act, one that is in the interest of the national economy, and that the universities would be benefited by it and that it should be passed. I wonder how specifically this would help the universities.

Mr. CALDWELL. Well, it helps the universities only in this sense, if I may answer your question, Mr. Chairman. I think it helps universities only to do the job they have been trying to do. We respond to a public need. Right now we have a program at our institution that is an industrial extension service, and we are always straining to help people to do their job. We need more funds and it would help us to do the job. But really it doesn't help the universities in perhaps the sense you were thinking of. We want this to help the economy which is what our efforts have been directed toward.

Mr. MACDONALD. Well, sir, I am just quoting your statements, as you understand.

Mr. CALDWELL. Yes, I understand, I understand. And really this is to help the economy and to help the country which is the only purpose of the universities, as a matter of fact. They are not self-serving operations.

Mr. MACDONALD. I can only agree and ask if there are any other questions. [Laughter.]

Mr. HUOT. I don't have any questions but I would like to congratulate Chancellor Caldwell and to express my appreciation and pleasure that the University of New Hampshire is so well represented here today through Mr. Faiman.

When we are talking about regions I think the University of New Hampshire probably stands out in its area and only recently the Kellogg Foundation gave an amount of almost \$2 million to the University of New Hampshire as designated agency for continuing education which is a matter of some credit for our university.

Going back to the statement that was made earlier I could only regret the aspect of this weight control with which I am personally involved. [Laughter.]

Mr. MACDONALD. I was about to say that the university and college which I attended is always being attacked for not being a nonprofit, or rather being a self-serving institution in that everything they own is tax free, and they own apartment houses and city blocks.

Mr. CALDWELL. Yes, sir.

Mr. MACDONALD. This, of course, is in Boston, and they are expanding in various fields, not necessarily always academic fields—in real estate as a matter of fact.

Mr. CALDWELL. Yes.

Mr. MACDONALD. They have been accused very often of being self-serving, very self-serving.

Mr. CALDWELL. Yes.

Mr. MACDONALD. Because they show a good large profit in their operations, which I don't suppose should be held against them:

Mr. CALDWELL. Oh no—certainly not.

Mr. FARNSLEY. MIT, for the record is not a land-grant institution in the sense that the witnesses used the term. It is unimportant, but—

Mr. MACDONALD. MIT is not unimportant. [Laughter.]

But I was told by the witnesses yesterday that it was a land-grant college.

Mr. CALDWELL. MIT was one of the founder members of our association of land-grant colleges.

Mr. FARNSLEY. Then I must be mistaken.

Mr. CALDWELL. Yes.

Mr. FARNSLEY. I understood that it was a land-grant college, State land grant.

Mr. CALDWELL. That is right.

Mr. FARNSLEY. Well, can't a State land-grant college join your lodge? [Laughter.]

You just said MIT is a State land-grant college.

Mr. CALDWELL. Well let me try to explain it—originally it was Massachusetts itself that designated MIT to receive some of these Federal funds to perform some of the job that is outlined in the Land Grant Act. It is the same as New York State—New York State has never had a publicly supported land-grant university but they contracted with Cornell to perform these functions.

Mr. FARNSLEY. MIT is not a Federal land grant, then—I don't know where I got that [laughter] but it belongs to your organization?

Mr. CALDWELL. Yes.

Mr. FARNSLEY. Could an institution, that only has State land-grant funds join your association?

Mr. CALDWELL. Let me say this—

Mr. FARNSLEY. Because I have got an applicant. [Laughter.]

Mr. CALDWELL. Our association has two groups of members: State-supported universities, such as the University of Oklahoma and the

University of Mississippi, then separate land-grant institutions that were established under the 1862 act of Congress, such as North Carolina State University, Oklahoma State University, Texas A. & M. University and so on. In several States these are one and the same institutions.

Now there are only two mavericks in the whole group which were designated by State legislatures at the outset to receive and to perform some of the land-grant functions contemplated by the 1862 act and they are MIT and Cornell.

Mr. FARNSLEY. But they didn't get any of the Federal land?

Mr. CALDWELL. No, sir; they got some of the funds and the proceeds from them which are held by the States themselves. They did not receive the funds in the first place but were designated instead to perform certain functions.

Mr. FARNSLEY. Now, I know I should know what this bill means and I realize that I should not be asking you about it, but if the State designates them, what do you think that means?

Mr. MACDONALD. If I could answer that, Mr. Farnsley—

Mr. FARNSLEY. Well, it could be anybody.

Mr. MACDONALD. No; it couldn't be anybody. They have to be accredited.

Mr. FARNSLEY. Where does it say that?

Mr. MACDONALD. It says it in here.

Mr. CALDWELL. No, sir; it doesn't say it. It doesn't say they have to be accredited and that is a little problem that I had with the bill, as a matter of fact. We ought to get this cleared up.

Mr. MACDONALD. Well, I would agree with you. It is a very good point.

Mr. CALDWELL. Would you allow Dean Ratchford to take care of this one?

Mr. MACDONALD. Yes.

Dean RATCHFORD. A designated institution means also that it has to be qualified.

Mr. MACDONALD. Which translated means "accredited."

Mr. FARNSLEY. Where does it say that?

Dean RATCHFORD. In the section, well—

Mr. CALDWELL. No; it doesn't say that; you say.

Mr. MACDONALD. Page 3, section (b) states they have to be—

Dean RATCHFORD. Yes.

Mr. MACDONALD. Yes; you have to relate it back from the other section.

Dean RATCHFORD. Well, I think you have a significant point. Some of us served on the task force that helped to develop this bill and I know the intent all the way through was that a designated institution would be selected from among qualified institutions and the qualified definition is quite tight.

Mr. MACDONALD. If you will permit me because we have some other witnesses, but I just feel we ought to clear this point up, because I think it is important. On page 3 it starts with section (b) and then it goes down to (c) and it says:

"Qualified institution" means (1) an institution of higher learning with a program leading to degrees in engineering or business administration which is accredited by a nationally recognized accrediting agency or association to be listed by the U.S. Commissioner of Education, or such an institution which is listed separately after evaluation by the U.S. Commissioner of Education pursuant to this subsection.

■ So it just can't be any one—you couldn't invent a college to benefit from this.

Mr. FARNSLEY. You read the definition of "qualified institution" Mr. Chairman, but you didn't read—and I am not fussing, I am your friend [laughter] but you didn't read all of it. It says, "If the Secretary of Commerce will approve of it." And this could be lots of things. I still want to know where it says a designated institution must also be qualified.

Dean RATCHFORD. Mr. Chairman, I think I would agree with that and I would suggest that one addition be made in paragraph (b); namely, that the designated institution meet the qualifications of a qualified institution.

Mr. MACDONALD. Excuse me?

Dean RATCHFORD. Add to the (b) paragraph that a designated institution meet the requirements of qualified institutions as spelled out in section (c).

Mr. FARNSLEY. Well we all know that a qualified institution would be any nonprofit organization that the State and the Secretary of Commerce is willing to approve of.

Dean RATCHFORD. This is handled in paragraph (d) on page 4.

Mr. MACDONALD. That's right, but it goes back over now to the other section and it says exactly what you said should be said.

Dean RATCHFORD. That's right. I know we meant for it to be there.

Mr. FARNSLEY. Well, what does it say?

Mr. MACDONALD. Well, if you will look at page 4.

Mr. FARNSLEY. All right.

Mr. MACDONALD. Under the section there for plans and programs, and I don't know if it is necessary to read it into the record but I suppose it would do no harm. It says:

Section 3. Any State which wishes to receive Federal payments under this act in support of its existing or planned technical services program shall designate, under appropriate State laws and regulations, an institution or agency to administer and coordinate that program and to prepare and submit plans and programs to the Secretary of Commerce for approval under this act. If the institution or agency designated by such State is not a State university or land-grant college entitled to benefits under the act approved July 2, 1862, or the act of August 30, 1890, and acts amendatory and supplementary thereto, the Governor or other competent State authority shall furnish the Secretary a written statement of his reasons for designating such other institution or agency.

And then you go from section 4 as to why it is an accredited institution.

Mr. CALDWELL. Section 2-b has a little phrase in there which defines participating institutions as meaning "the institution or agency in each participating State, which has been designated as administrator of the program for such State under section 3 of this act."

Mr. FARNSLEY. Well, that is what I want to see. Where is that piece, sir?

Mr. CALDWELL. This is section 2, subsection b and it is on page 3.

Mr. FARNSLEY. That is the participating State, though.

Mr. MACDONALD. Well, participating institution means each qualified institution in the State which participates in the administration or execution of State technical service programs as provided for by the act.

Mr. CALDWELL. That's right.

Mr. FARNSLEY. But the only thing you have to do about that is, if the State wants it, write a letter.

Mr. MACDONALD. No, it says "qualified." Maybe we ought to take this up in executive session.

Mr. CALDWELL. It ought to be cleared up a little more, Mr. Chairman, in my opinion.

Mr. MACDONALD. Yes.

Mr. FARNSLEY. Well, what do you think it means now?

Mr. CALDWELL. Well, I think it is intended to mean that the designated institution must be a qualified institution in order to participate as an administering agency or participating agency.

Mr. FARNSLEY. But qualified could be——

Mr. CALDWELL. I think it should be made a little more explicit.

Mr. FARNSLEY. A qualified institution could be any institution that the Commissioner of Education is willing to certify.

Mr. MACDONALD. Oh no, if you will permit me, Mr. Farnsley——

Mr. FARNSLEY. I will. You are the chairman. [Laughter.]

Mr. MACDONALD. If you will yield, the fact of the matter is that it has to be, as we discussed with the gentleman from Texas, it has to be accredited by either an engineering society which I have forgotten the name of——

Mr. CALDWELL. The Engineers Council for Professional Development.

Mr. MACDONALD. Yes, or the Business Administration Society.

Mr. FARNSLEY. You are talking about designated institutions.

Mr. MACDONALD. Yes.

Mr. FARNSLEY. But if the Governor writes a letter to the Secretary saying that he wants an institution designated you never could reject his note and I don't care what it is the law says.

Mr. MACDONALD. I think a Federal commissioner could reject his note.

Mr. FARNSLEY. Well it doesn't say so. It says if there is no accredited agency then the Governor or other competent State authority shall furnish the Secretary a written statement with his reasons for designating such other institutional agency.

Mr. MACDONALD. I am sure that that would never happen in Kentucky.

Mr. FARNSLEY. Oh, yes, it would. We have got something called Spindletop where anything is likely to happen. [Laughter.]

Go ahead.

Mr. MACDONALD. Well, thank you very much for coming.

Mr. CALDWELL. Thank you very much, Mr. Chairman.

Mr. MACDONALD. We appreciate your testimony.

Now, gentlemen, the House is in session and I know that many of you people have come from great distances to testify before this committee, but under the rules of the House we should not be sitting here when the House is in session without the permission of the House.

Therefore, I am going to ask if it is possible for Dr. Westerlund or Dr. Wetner or Mr. Hostetler to come back tomorrow morning?

Mr. HOSTETLER. I will be unable to appear but I would like my statement to be incorporated into the record as if it were read.

Mr. MACDONALD. Yes, certainly. You are representing the New England Council for Economic Research and Development?

Mr. HOSTETLER. Yes, Mr. Chairman.

Mr. MACDONALD. Thank you very much. Your statement will be incorporated as part of the record.

Mr. HOSTETLER. Thank you.

Mr. WESTERLUND. Mr. Chairman, I shall be unable to appear in the morning, perhaps, but I would have one of my associates represent me.

Mr. MACDONALD. That would be perfectly satisfactory. With that understanding then we will adjourn until tomorrow morning in this room at 10 o'clock.

(Whereupon, at 12:10 p.m., the committee was recessed, to reconvene at 10 a.m., Thursday, June 3, 1965.)

STATE TECHNICAL SERVICES ACT OF 1965

THURSDAY, JUNE 3, 1965

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON COMMERCE AND FINANCE OF THE
COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE
Washington, D.C.

The committee met, pursuant to notice, at 10 a.m., in room 2218, Rayburn House Office Building, the Honorable Torbert H. Macdonald, chairman of the subcommittee, presiding.

Mr. MACDONALD. The hearing will be in order.

Our first witness this morning will be our colleague from Georgia, the Honorable James A. Mackay.

STATEMENT OF HON. JAMES A. MACKAY, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF GEORGIA, PRESENTING STATEMENT OF J. WHITNEY BUNTING, DEAN, COLLEGE OF BUSINESS ADMINISTRATION AND GRADUATE SCHOOL OF BUSINESS ADMINISTRATION, UNIVERSITY OF GEORGIA

Mr. MACKAY. Mr. Chairman and members of the committee, Dr. J. Whitney Bunting, dean of the College of Business Administration and Graduate School of Business Administration of the University of Georgia in Athens, Ga., asked me if I would present his statement to your committee on behalf of the American Association of Collegiate Schools of Business and the Division of Business Administration of the National Association of State Universities and Land-Grant Colleges. I have gone over this testimony with him and I would like to associate myself with the views that are expressed therein because although the University of Georgia is not located in my district, Emory University with a very strong school of business administration is situated therein. It is a brief statement and I would like to read it.

Mr. MACDONALD. Very well.

Mr. MACKAY. Mr. Chairman and members of the committee, my name is J. Whitney Bunting and I am dean of both the College of Business Administration and the Graduate School of Business Administration of the University of Georgia. I am appearing before you in the capacity of chairman, committee on Federal legislation, American Association of Collegiate Schools of Business; vice chairman, Division of Business Administration, National Association of State Universities and Land-Grant Colleges; and as a member of the subcommittee on legislation of the latter body. These two groups include in their membership the leading schools of business administration at the college and university level, both public and private. The member-

ship of the American Association of Collegiate Schools of Business is currently 117 institutions fully accredited and performing quality education for business. The National Association of State Universities and Land-Grant Colleges includes 97 publicly supported institutions with either colleges of business administration (or departments or divisions) included in its division of business administration. Statistics indicate that approximately 20 percent of all students pursuing higher education in the United States are enrolled in the field of business administration. Moreover, the faculties of business administration in these colleges and universities comprise the largest source of talent to carry out the goals and objectives of the State Technical Services Act. Through teaching, research, and consultation, these faculty members provide a tremendous resource for economic and business development in the areas of service which each purports to cover.

Although I should like to suggest, on behalf of my colleagues, one very important change or modification of proposed H.R. 3420, I wish to emphasize quite vigorously our support of the passage of this bill. We believe that the future economic and business development of the Nation, its States, regions, and communities is dependent in large part upon our ability to place in the hands of businessmen the great body of knowledge that is constantly being developed through research into economic and business operations. Moreover, much of this new knowledge must be analyzed and adapted for the use of the many diversified types of business institutions. This requires interpretation and application that can best be provided by the personnel in our collegiate schools of business in this country.

American business and industry is today a complex and dynamic process. Moreover, other nations of the world are also making great strides in business know-how and techniques, thus creating a degree of competition in world markets that will become increasingly heavy as the years go by. Many of our business firms must have firsthand knowledge of this new methodology if they are to succeed and prosper. Yet much of this new knowledge is locked away where it can do no economic good.

Millions of dollars of research money is being provided by the Federal Government to support space era growth and development. Much of the results of these research projects constitutes knowledge and information that could be tremendously useful to our business society when it can be placed in the proper hands with proper advice and assistance. The State Technical Services Act does provide a mechanism through which this knowledge can flow into the national business economy, thus serving as a strong force for rapid economic advancement and development. Our Nation cannot afford to place any roadblocks in the pathway of new knowledge into the business enterprise.

The schools and colleges of business administration which I would represent would respectfully suggest a broadening of the wording of H.R. 3420 so that it will more nearly represent a solution to national economic need. It is true that the act does specify that a qualified institution in the terms of the act should have an accredited college of business administration. However, much of the remainder of the act seems directed to the schools of engineering and, perhaps, engineering extension. We feel this to be a serious error.

Perhaps a major difficulty is the titling of the measure, "State Technical Services Act." Public connotation of the term "technical" immediately restricts activity to the area of science and engineering. It is true that such information is a vital part of any program of informational aid to business. Yet this is not the only area of potential informational support needed, nor is it even the major area. Practically every business process today is technical in nature, whether it be accounting, finance, management, marketing, or even labor relations. The application of scientific methods, procedures, and equipment to the solution of business problems and to aid in the development of the economic process is a matter of fact, now. It seems to the colleges of business that this has not been properly recognized in the bill currently before this committee, H.R. 3420. For example, a new mechanized technique in accounting provided to an industry or business is truly a "technical service." The application of computers to management decision-making is a "technical service." The application of new knowledge reached through research in the behavioral sciences is a "technical service." Even the development of ethical conduct in business situations could be a "technical service." Yet the wording of the proposed act before you does not offer strong evidence that these areas should be construed as technical services. We respectfully suggest that the House Committee on Interstate and Foreign Commerce give additional consideration to this matter.

We further suggest added recognition to the role of the colleges of business administration in the implementation and administration of the program. As indicated earlier in this testimony, the faculties of the colleges and universities engaged in higher education for business provide the greatest reservoirs of talent to apply technical services in the broadest possible sense to the solution of business problems. They have a history of strong interest in economic development in all areas of this Nation and it is their wish to continue this tradition.

If H.R. 3420 is passed and becomes the law of the land, we foresee no other successful possibility for the objectives of the act than by the full and complete utilization of the colleges of business administration along with other academic areas of our universities such as engineering, extension, agriculture, and arts and sciences.

May I reemphasize, on behalf of the associations that I represent, that we are strongly in accord with the goals and objectives of H.R. 3420. We believe it can have meaningful implication for the future development of our economy. We feel that the plan to make available "technical services" to business and industry is long overdue. But we respectfully ask that the committee consider most seriously:

1. A more detailed statement or definition of technical services to include all advances of knowledge related to business practice; and,

2. A more specific inclusion of the role that colleges of business administration must play in the proper implementation of the act.

Mr. MACDONALD. Thank you very much, Mr. Mackay.

Are there any questions?

Mr. HARRIS. I think probably it should be pointed out, as I understand this to be, that it does include business administration along with engineering.

Mr. MACKAY. I think he makes that point, Mr. Chairman, in the front of the act but apparently he has some fear that too narrow a construction would be placed on it. As I understand his testimony, he wishes the language to be not capable of the restrictive construction.

Mr. HARRIS. Did he overlook the definition of what a qualified institution is?

Mr. MACKAY. I did not understand that from his testimony. But he mentioned in the latter part of the act that he thought it should be expanded and broadened and also the definition of the technical services.

Mr. HARRIS. Technical services according to the definition means activities or programs designed to enable business and industries to acquire and use scientific and engineering information more effectively through such means as, and it goes ahead and describes what is provided—even industrial workshops, seminars, and training programs. Then it provides for a “qualified institution,” which would participate, means one of higher learning with a program leading to degrees in engineering and business administration. I really call this to your attention in order that it might get into the record.

Mr. MACKAY. I think that may be the reason for the testimony, to be sure that the legislative history shows that it is the intent of the committee that this broad interpretation be applied.

Mr. HARRIS. Actually I complained somewhat the other day to the Secretary that the whole bill was too general and too broad. What we need to do is to get it down in more precise terms so we would know just what would develop. I think there is a lot of merit to it and it should be developed on the basis that the Congress as well as the institutions and business industry and everyone else would know what it will do.

Mr. MACKAY. I feel the illustrations Dean Bunting has given are very helpful in pointing out the variety of technical services. He was very sorry that he could not be here personally.

I have enjoyed sitting in for a Ph. D.

Mr. HARRIS. Thank you, Doctor.

Mr. MACDONALD. Mr. Farnsley.

Mr. FARNSLEY. I agree thoroughly that it ought to be clear. I think your statement says that the social sciences ought to be allowed to help in this and the behavioral sciences. I believe this very strongly. I believe that any accredited college or university ought to have a chance to help, because the psychology department, sociology department, and economics department often can contribute as much as the engineering or school of business.

Mr. MACDONALD. Thank you, sir.

Mr. MACKAY. Thank you.

Mr. MACDONALD. The next witness is our colleague on the full committee, the Honorable J. J. Pickle of Texas. Mr. Pickle, welcome to the subcommittee. We will be glad to hear you at this time.

STATEMENT OF HON. J. J. PICKLE, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF TEXAS

Mr. PICKLE. Mr. Chairman, I appreciate this opportunity to appear before this committee today in support of a vital measure which in my opinion, would help coordinate the dissemination of business

and scientific data to interested business and governmental agencies.

H.R. 3420 is a bill designed to place the findings of science into the hands of American enterprise more effectively and efficiently. It seems that this bill would provide vital clearinghouses for the compilation and distribution of significant research data that our free enterprise system is constantly demanding.

As I see it, this bill would in no way create competition within the business world, or competition between free enterprise and Government. Rather, it would achieve a more effective application of the findings of scientific research, and thereby improve our Nation's competitive position in world markets.

This proposal could mean much to my State of Texas. For example, the University of Texas is a rapidly growing research center and is constantly engaged in valuable scientific studies. If efficiently assembled and compiled in a research center or clearinghouse—as provided for in this bill—these findings could be disseminated throughout our State for the use and benefit of all segments of our economy.

Although I haven't had an opportunity to hear all of the testimony on this bill, I consider the proposal a generally good and sound approach—particularly to the problem of coordinating the dissemination of scientific and business research data to all concerned.

Mr. MACDONALD. The next witness is our colleague from Georgia, the Honorable Robert G. Stephens, Jr. Mr. Stephens, we are happy to have you appear today.

STATEMENT OF HON. ROBERT G. STEPHENS, JR., A REPRESENTATIVE IN CONGRESS FROM THE STATE OF GEORGIA

Mr. STEPHENS. It is a condition of modern times that no nation can hope to achieve a steady rate of growth in its economy without having available the resources of science and technology. This prerequisite applies to the various regions of the world. It is true of individual nations, and it is true of all the States in America.

Research and development must be fully supported. Education must prepare young people for the constantly changing needs of the society. There must be a climate in which technological change can come about with the least displacement and the broadest benefits.

Basic to an effective relationship between science and the economy, however, is the mechanism for putting the results of science into the hands of those who can put the new knowledge to practical use.

Recognizing that new scientific information does not get put to use automatically or quickly by local industries, many of our States are trying to stimulate their economic growth by developing cooperative programs between industries and universities to bring about the practical use of science. I am pleased to be able to say that the State of Georgia has been among the leaders in this effort.

Not all of the States, however, have had the resources, either financial or institutional, to set up adequate programs. Even the more successful States are not able to support programs which optimize their capabilities. The proposed State Technical Services Act of 1965 is intended to supplement local funding, by means of matching grants to the States, thereby further stimulating and enabling the development of effective programs in all of the States.

I believe that the program envisaged in this bill is one that our States can support. It is not a Federal program run in Washington. Instead, it stresses initiative on the part of each of the States. It stresses the development within each of the States of a long-range plan for stimulating business and industrial growth by exploiting local resources. It would provide for and encourage the diversity among State programs which reflects the diversity of the States themselves.

Gentlemen, those of us in Georgia know the benefits to be derived from the proposed program. I urge that this bill, the proposed State Technical Services Act of 1965, be enacted into law.

Mr. MACDONALD. Mr. Stephens, we thank you for your appearance and testimony.

Mr. STEPHENS. Thank you, Mr. Chairman.

Mr. MACDONALD. Dr. Barton A. Westerlund, director of the Research and Extension Center, University of Arkansas.

Mr. HARRIS. Mr. Chairman, I would like to say that Dr. Westerlund is here representing the University of Arkansas, our land-grant school in our State, that is very much interested in this program.

Dr. Mullins made a statement recently on the need for some such program of this kind. I had the privilege of being present and listening to his dissertation on the subject. Dr. Westerlund is a former president of Florida Business Research, Inc. I am sorry our colleague, Mr. Rogers of Florida, is not here to join in welcoming Dr. Westerlund to the committee.

He formerly taught at the University of Arkansas, having received his Ph. D. degree from that institution, and is presently associate director of the University of Arkansas Industrial Research and Extension Center, which is a part of the College of Business Administration, I believe, of the University of Arkansas.

Dr. Westerlund is here to give his views out of the experience he has had as to the importance of this program.

STATEMENT OF BARTON A. WESTERLUND, PH. D., ASSOCIATE DIRECTOR, INDUSTRIAL RESEARCH AND EXTENSION CENTER, UNIVERSITY OF ARKANSAS

Mr. WESTERLUND. Thank you, Mr. Chairman.

Mr. Chairman and members of the committee, I am Barton Westerlund, associate director of the University of Arkansas Industrial Research and Extension Center, a part of the College of Business Administration.

I am offering a statement concerning the College of Business Administration's point of view regarding the importance of S. 949 and H.R. 3420 to the development of Arkansas and, of course, the Nation.

The State of Arkansas has made considerable economic progress in recent years. In the 4 years, 1959-63, Arkansans increased their total personal income a phenomenal 26.5 percent. The major impetus to this truly great increase has been the rise in the wages and salaries paid by business.

However, Arkansas, as a result of her late emergence as an industrial State, continues to have a low per capita income relative to the Nation. In 1963 the Arkansas per capita income was \$1,607, or 65.6 percent of the national per capita income of \$2,449.

Perhaps since the family is the typical consumption unit, Arkansas's economic status is more adequately portrayed by family income. In 1959 the census reported there were 42 counties in which the median family income was less than \$3,000 annually. At that time the median family income for the Nation was \$5,657 and \$3,184 for Arkansas.

Even though Arkansas has progressed greatly in recent years, and new businesses have been organized—some have been brought into the State—there has been an employment loss due to inefficiencies of existing businesses. A great boost to the economy would occur if we could prevent further employment losses in existing businesses.

A partial answer to avoiding further employment decreases is to bring sound managerial advice as well as technological knowledge to these firms. Often the problem is not lack of technical skill but rather lack of business skill; for example, in the marketing of products and in the financing of the firm.

Arkansas can accelerate its economic growth if local businesses grow and prosper. Among the most important requirements for successful business growth is the need to develop and inform management. Management development can be achieved through a combination of formal education, short courses, and counseling services.

The need for expert guidance in today's complicated business problems has become increasingly apparent. Large-scale business has been able to obtain the advice of various types of experts as the need arises. Many small businessmen are unable to obtain such services, however, or being unfamiliar with advantages obtained from such services, are reluctant to seek advice. Therefore, public agencies can serve as a means of introducing the small businessmen to the use of outside assistance.

Our State has pioneered in this field. The University of Arkansas established the industrial research and extension center, a part of the College of Business Administration, in 1955, at the same time the general assembly established the Arkansas Industrial Development Commission. The industrial research and extension center's objectives are (1) to assist the Arkansas Industrial Development Commission and other development agencies by providing an organization with a wide background of research and technical skills; (2) to provide local development groups and communities with advisory services, research and assistance on technical problems; and (3) to provide a coordinating agency within the university structure for economic research and management training programs.

The industrial research and extension center has engaged in several types of extension services during the past decade. It has provided a limited counseling service to small businessmen throughout its history. It has also offered a variety of management education programs and, together with other organizations, has provided formal management counseling services.

Its first experience in the latter field was a jointly sponsored program with the Arkansas State Chamber of Commerce, which in 1958 resulted in a published report entitled "Helping Arkansas Manufacturers Expand."

Dr. Winston C. Beard refers to this report in describing the program as follows:

"The limitations of management itself are the chief problems of small manufacturers as viewed by bankers and outside observers." This conclusion was reached after case studies of 22 small manufacturing firms in a recent joint study

by the Arkansas State Chamber of Commerce and the University of Arkansas's Industrial Research and Extension Center. Far overshadowing the financial handicaps of these firms, most of which had been selected as having promising expansion potentials, were four management limitations. Three concerned the training, staffing, and succession of management within the firm. The fourth, and major limitation, was the failure to seek and use outside advice.¹

Under the provisions of the Small Business Administration grant programs in 1959 and 1960, the Industrial Research and Extension Center, together with three other agencies—Arkansas Industrial Development Commission, First Arkansas Development & Finance Corp., and the Arkansas State Chamber of Commerce—conducted counseling programs for Arkansas businesses. The objective of this program was to determine the most effective means of counseling small firms. Experiments were conducted in mass counseling and individual counseling. Mass counseling or conferences are both useful and feasible according to this study. Forty companies received counseling by means of three "clinics," and 80 percent of the participants appreciated the value of the information presented to them and expressed a desire to attend additional seminars on subjects pertinent to their industries. The individual advisory services were limited and brief, usually involving between 2 and 5 man-days of time for a preliminary visit and a specific consulting service. The cost usually was between \$200 and \$1,000.

Various types of consultants were used. In the followup study management firms receiving the consulting services were asked their opinion concerning the usefulness of this type of service. The preponderance of opinion was that these advisory services were of real value to their operations. In 1963 managers of two of the firms receiving this advice were designated "outstanding small businessmen" by the President of the United States.

Because of the industrial research and extension center's unique qualifications of personnel and experience, the university, with the concurrence of the commission on coordination of higher educational finance, and on the recommendation of the Arkansas Economic Expansion Study Commission, asked the legislative council and the Arkansas General Assembly to provide funds for the expansion of the business extension and technical services division of the industrial research and extension center. A modest appropriation was granted for the next biennium with the intent that additional funds might be obtained from the Federal Government under the proposed Technical Services Act.

In Arkansas major benefits from H.R. 3420 and S. 949 will come from the application of modern techniques of accounting, marketing, financing, production management and personnel management to the problems of the relatively small Arkansas business concerns in all fields of business. This includes retailing, banking, manufacturing, and the service businesses such as those that serve the tourist industry. Of course, manufacturing firms and some other businesses will benefit from new scientific and engineering technology that will be made available under the proposed Technical Services Act.

We think the industrial research and extension center should have a minimum of six regional offices staffed with appropriate management and technical advisers to serve business under the State Technical

¹ "An Experiment in Advising Small Manufacturers" by Winston C. Beard (assistant professor of finance, the University of Texas, formerly on the staff of the University of Arkansas Industrial Research and Extension Center), p. 1.

Services Act of 1965. Economic studies of the major industries of each region will need to be made and case studies of representative business firms of each type of business in each region will be needed to determine the nature of the problems facing these business concerns.

The economic and case studies will furnish the teaching materials needed for management seminars and workshops. In addition, by the use of members of the staff and consultants the industrial research and extension center hopes to bring a number of representative business firms in the various lines of business up to a high level of efficiency so that they could be used as demonstration centers for the participants of the management seminars and workshops.

In summary, S. 949 and H.R. 3420 will make it possible for Arkansas to have a complete and effective program that will create more jobs at higher wages. It will fill the gap in our present program which practically ignores the problems of the business concerns already operating in Arkansas—mostly home-owned business concerns. The thousands of small business concerns which dominate the Arkansas economy are desperately in need of the benefits that latest developments in business and science can contribute.

I might add that in Arkansas this act has the support of the Arkansas Bankers Association and the State chamber of commerce.

I should like to make one further comment. We have the support for this legislation from groups such as the State chamber of commerce and the Arkansas Bankers Association. In addition, I would like to offer to the committee these two studies to which I referred concerning the counseling techniques used under the SBA programs.

Mr. MACDONALD. They will be included.

Mr. HARRIS. Observing that they are pamphlets, they might be included in the files of the committee. Let the committee determine if it would be appropriate for them to be included in the record. Otherwise, let them remain for the information of the committee in the files.

Mr. MACDONALD. Very well. Thank you, Doctor. I want to congratulate you on your statement and also point out a fact that I am sure you know.

Our distinguished and beloved chairman of the full committee is from Arkansas and certainly Arkansas could not have somebody here in the Congress who protects the interest of Arkansas to my very personal knowledge better than the chairman of our full committee.

I am sure your words and your support of this bill will be very carefully noted by our chairman.

Mr. WESTERLUND. I appreciate those remarks, Mr. Chairman. I do want to mention that all of us in Arkansas do appreciate Mr. Harris' efforts in this regard.

Mr. MACDONALD. You are very wise to do so.

Mr. CURTIN. May I ask a question, Mr. Chairman?

Doctor, have you estimated how much you would need from the Federal Government each year to carry out the purposes of this act as you outline in your statement.

Mr. WESTERLUND. This is rather difficult to say. The State appropriated a modest sum, I think \$54,000 for the first year operation and \$56,000 for the second, with the idea of beginning a pilot program, because we feel, of course, that we cannot go into a full-blown program immediately. We have to have some further experience and we

expect within a matter of 2 years to have a much larger program if it proves feasible. I would like to point out to you that we believe that the industrial research and extension center will have to broaden some of its professional talent. We need to obtain the services of other people from other colleges and the graduate institute of technology within the university. This would be a coordinated university program as far as we are concerned.

Second, we would expect to use outside consultants. We foresee that this would be a method of actually increasing the use of consultants because we could only isolate the problems and perhaps demonstrate what might be done and from then on the best interests of the businessmen would be served by using private consultants.

Mr. CURTIN. But you are not able to put a dollar mark on how much you would ask of the Federal Government to accomplish this.

Mr. WESTERLUND. We would hopefully expect to receive matching funds, possibly to the same amount that we have appropriated from the State legislature for this purpose in the early stages of the program. I have examined various copies of the bill throughout its progress as it evolved and realize there have been various suggestions as to the amount of money. Not really fully anticipating Federal participation we had thought our programs would require a million dollars a year in order to do this job effectively in a State such as Arkansas, but this could not be accomplished immediately.

Mr. CURTIN. You mean a million dollars from Arkansas and a million dollars from the Federal Government or a total of the million dollars?

Mr. WESTERLUND. A total of a million dollars is an estimate of what it would be in 5 years. That is some time ago and perhaps we would revise our estimates now.

Mr. CURTIN. Thank you.

Mr. HARRIS. As a matter of fact, you would be limited by the amounts available from the State.

Mr. WESTERLUND. That is right.

Mr. HARRIS. If it were available now then the maximum under the action of the State legislature would be \$54,000.

Mr. WESTERLUND. That is right.

Mr. HARRIS. From the Federal Government. You would be guided, of course, by the limitations placed on you as to the availability of local funds.

Mr. WESTERLUND. That is right. There has been some discussion whether or not there should be some fees paid by businesses taking part in courses and that type of thing. There have been a number of points of view on this. There are a number of different plans in operation today in the various States.

Mr. HARRIS. Would your center be the agency that would develop the plans under the proposed bill?

Mr. WESTERLUND. I should imagine it would.

Mr. HARRIS. Or would the AIDC be the organization?

Mr. WESTERLUND. No; I am sure it would be within the university structure.

As I mentioned to you before, Mr. Harris, this would be an overall university program and we would involve personnel from other colleges as well as the university under the terms of the act.

Mr. HARRIS. I do not believe we have another institution in our State that offers courses in engineering and business administration.

Mr. WESTERLUND. They do in business administration, sir, but they do not have a college of business administration, as such.

Mr. HARRIS. But they do not in engineering.

Mr. WESTERLUND. The first 2 years, but not a full course. So, most likely if there is any institution of higher learning designated, the University of Arkansas would be so designated.

Mr. HARRIS. Thank you, sir.

Mr. MACDONALD. Mr. Farnsley.

Mr. FARNSLEY. It has long seemed to me unfair that there was not a service available to businessmen that parallels the service available to the farmer, such as the research in the State or land-grant universities with the county agent to channel that knowledge to the farmer. Is the service that you furnish one that is parallel to that?

Mr. WESTERLUND. It is somewhat parallel but much more limited financially.

Mr. FARNSLEY. If you had the money it is the same principle.

Mr. WESTERLUND. That is right.

Mr. FARNSLEY. How much engineering do you need?

Mr. WESTERLUND. This is something we really do not know as yet. We have had chemical engineers, mechanical engineers, and water geologists and other people on our staff at various times. In addition to that we have drawn on the staff of the college of engineering.

Mr. FARNSLEY. Is there any doubt in your mind that the schools of business administration should be the captain of the team and call on the necessary technicians from engineering and from social and behavioral sciences?

I do not want to lead the witness. I want to know what you think about it. Who should be the captain of the team?

Mr. WESTERLUND. That is a very difficult question. I really believe that this is a new form of organization that we have here, and I think the businessman is accustomed to those who are business oriented.

Mr. HARRIS. If the gentleman will yield, under the bill whoever the Governor designated would be the captain. That would be left up to the decision within the State, as I understand.

Mr. WESTERLUND. Yes, sir.

Mr. FARNSLEY. There is a strong indication that the captain be, 1, engineering; and 2, school of business.

Mr. HARRIS. I do not think so. I believe it leaves it to the Governor to designate.

Mr. FARNSLEY. I agree that is true in the bill. I am not trying to find out what the bill says, but what the witness feels is desirable. I was hoping he would say his outfit was the proper captain of the team but he seems to be too modest.

Mr. WESTERLUND. Mr. Farnsley, according to the action of the State legislature it was evident that they thought such back about 10 years ago.

Mr. FARNSLEY. Thank you, sir.

Mr. MACDONALD. Doctor, I just have one question, and I know you were here yesterday and it is in the same reference. On page 5 you talk about the studies to be made of the industries of each

region and repeat each region now and again. I was wondering what region you had in mind as far as Arkansas would be concerned.

Mr. WESTERLUND. At Arkansas we have done a preliminary State economic plan and have divided the State into various regions.

Mr. MACDONALD. In other words, this would be regions within the State of Arkansas.

Mr. WESTERLUND. Yes.

Mr. MACDONALD. And not as the gentleman from the Department of Commerce said the region would be two or more States.

Mr. WESTERLUND. This does not present a real complication. For instance, we might want to cooperate with the area around Memphis in eastern Arkansas and the area around Texarkana in Texas. These can be worked out. I do not think they are mutually exclusive.

Mr. MACDONALD. My question goes to the fact that if a Governor designates an agency within a State, I do not quite see how he could designate a regional area. That would take cooperation between the various States.

Mr. WESTERLUND. It would be an interstate type of compact which could be arranged and very logically in some cases.

Mr. MACDONALD. I now repeat my question: What region would you think Arkansas would be in?

Mr. WESTERLUND. I really do not know how they would designate it. We are officially in the west south central as far as the census is concerned. I do not believe these are the regions they are talking about. I believe it is necessarily a bit ambiguous and vague because many times a region is a region because it thinks it is a region, an economic unit rather than a political unit.

Mr. MACDONALD. Thank you, Doctor.

Mr. WESTERLUND. Thank you.

Mr. Walter W. Wegner.

STATEMENT OF WALDO W. WEGNER, DIRECTOR FOR THE CENTER FOR INDUSTRIAL RESEARCH AND SERVICE, IOWA STATE UNIVERSITY, AMES, IOWA

Mr. WEGNER. Thank you, Mr. Chairman. I am Waldo Wegner, director of the Center for Industrial Research and Service, Iowa State University. Iowa State is the land-grant university in Iowa and we have been in operation since 1963 as I will tell you. You have a full statement from me which has considerably more detail than I will present to you now. It has some percentages of the type of projects we have handled in our 2 years of existence and some other details I did not feel would be on a time basis practical here.

Mr. MACDONALD. Would you want them included in the record?

Mr. WEGNER. I would like to have the original statement included in the record, if I may.

Mr. MACDONALD. Without objection, it will be included in the record.

(The statement follows:)

A REPORT ON THE CENTER FOR INDUSTRIAL RESEARCH AND SERVICE (CIRAS),
IOWA'S SERVICE ORGANIZATION FOR INDUSTRY

The need for technological aid and assistance to industry has existed in Iowa for sometime; however, it has become more evident in the last few years because of the growing industrialization of the State. Iowa has many and varied industries, but they have, in general, been sheltered by the broad umbrella of agriculture. In recent years, however, the umbrella seems to have been turned over. The total value of annual agricultural production in Iowa in 1964 was \$2,600 million and this figure continues to grow each year.

The problems of growth in many cases, however, require solutions using engineering or scientific technologies.

Almost daily some segment of industry—corporation or individual—makes inquiry at the university for technical assistance and guidance. In the past, or more specifically, prior to the establishment of CIRAS, such inquiries usually had been only superficially answered, if at all. This fact highlighted the need for technical assistance to industry.

As these needs were recognized and the pressure for some type of assistance increased, the question arose as to the role a university should play in helping solve these needs, particularly the role Iowa State University should play.

To aid in making the decision as to the nature and extent of this role, four engineering staff members visited some of the major research and development institutes, centers, parks, and industrial programs which seemed to be having an impact on industrial growth in their areas.

Those men studying the problem soon set out at least four basic technical assistance needs that existed:

1. Counseling, consultation, and guidance.
2. Specific problem solutions and aids.
3. Long-range research and planning.
4. Education and training.

It became evident to these men that a direct aid to industry program at Iowa State University would have to be conducted by a group devoted specifically to this purpose. They believed that the institutes and the research parks, which they visited, did not quite do the job that Iowa State University would have to do for the State of Iowa. The problem was then to set up an organization which could undertake a distinctly different role than had heretofore been attempted.

After the scope had thus been narrowed down by the committee, they proposed that the following program of university activities relating to industrial aid be initiated:

1. The establishment of a center in the college of engineering for the specific purpose of helping industry directly with its problems. This center would consist of a core of full-time employees who would provide technical assistance and service to parties interested in the development of industry in the State.

2. Qualified persons in engineering, science, business, economics, technical counseling, and research would be employed directly by the center and would be supplemented by other part-time staff on a consulting basis.

The functions of this group would be to counsel with industry on special problems, to advise regarding appropriate procedures for product development, marketing and production, and to conduct research and testing programs where necessary. In addition, the group would provide technical and managerial information through publications and conferences specially oriented for industrial use. The counseling services would be free, although research or special projects would be paid for by the interested industry, depending on the need and the industrial potential for the State. In general, funds for the center would be provided from State appropriations.

Through the cooperative efforts of university and industrial personnel, the proposal for the establishment of a center for a direct aid to industry was incorporated in the university's request to the State legislature in 1963. The legislature accepted the challenge and appropriated \$250,000 for the first 2 years for a program of engineering and technical assistance to Iowa's growing industry. The program was named the Center for Industrial Research and Service (CIRAS).

CIRAS opened its doors on July 1, 1963, with one employee. This man was a civil engineering graduate who temporarily was located in the dean of engineering's office. It was my privilege and good fortune to be offered the position of the

first director of this new program. I took over these duties as the director on a part-time basis on September 16, 1963, and moved into the office in which we are presently located on October 1, 1963. At that time my office included three desks and four chairs.

The Iowa State University administration did not, nor did the dean of engineering and the four engineering staff members who had made the outline which I presented to you earlier, hand me a format with the order that there was my organization chart—do something with it. They welcomed me to the campus, indicated that I must operate under the administrative rules of the university, and that my main job would be determined by the needs of the State of Iowa for service to industry. With this kind of confidence from the administration and the genuine support of the engineering college, CIRAS became active.

The CIRAS appropriation for the biennium, as indicated above, was set at \$250,000. The administration had, of necessity, rather arbitrarily set up a budget for the first year of \$100,000 and of \$150,000 for the second year.

We had been in operation for no more than 2 weeks when a committee from the Consulting Engineers Council of Iowa visited the office. They had previously indicated a serious misgiving and concern for the establishment of such an operation at Iowa State. It is my understanding that this objection originated in the national offices of the CEC. I welcomed the opportunity to discuss the program with this committee and offered to appear on a panel discussion of the program of CIRAS at the annual meeting of the State association of the consulting engineers. This panel discussion included a consulting engineer, the director of the Iowa Development Commission, an industrialist, and myself. The opportunity to discuss the program with this group of men was one of the most valuable public relation tools that a new organization could have been offered. I was also then given an opportunity to participate in the same type of program at the annual meeting of the Iowa Engineering Society, which is the State chapter of the National Society of Professional Engineers, and reached the many engineers who are not consulting. This gave the consultants that were members of the National Society of Professional Engineers a check on whether or not I would tell the same story twice.

I am happy to say that I count the consulting engineers and the engineering profession as a whole to be the strongest backers of the program which we have set up in Iowa. I believe that as I discuss the operation of CIRAS you will understand why they have become boosters for the program. I understand that NSPE had indicated opposition to the original technical services bill but it is with a great deal of pleasure that I read to you the NSPE policy approved by the executive committee regarding engineering information dissemination programs.

"The National Society of Professional Engineers endorses legislation and other activities designed to stimulate and assist the dissemination of current engineering information to industry through State educational institutions and other sources at the State and local level.

"Federal assistance to the States for this purpose will serve to stimulate the economy and the efficient use of engineering technology and will be to the benefit of the general public through higher levels of employment, improved standards of living, and more efficient production for a competitive position in world markets.

"Legislation to accomplish this purpose would insure that the Federal Government, through its financial assistance should not support engineering research or provide services to proprietary interests. Engineering information gathered and disseminated under the program should be made available to the general public and industry on a broad and general basis. An advisory council, including representation from the engineering profession, and industry, should be established at each level of operation of the program to monitor it for policy guidance and general direction."

I would like to take the rest of my time with you today to discuss the relationship between CIRAS and industry, or a client, and then give you a brief report of the things that we are establishing in the office for the future handling of problems.

Problems to be solved and questions to be answered come to the CIRAS office either through personal contact, telephone call, or by correspondence. One or more members of the CIRAS staff review the problem presented to determine its scope and type (marketing, management, product development), and the length of time that they estimate it would take to solve the problem or find the answer. If it is obvious that it is a problem that will take more than 2 or 3 man-days to solve, the staff automatically attempts to find a consultant, or a firm of consultants, that is in business in the State of Iowa and has the ability and the

experience to solve the problem. We attempt to give the names of at least two or three firms or individuals in each case if we have this number on record.

If the firm or individual with the problem negotiates a contract with one of the firms or individuals referred to him by CIRAS, we then step out of the picture.

Occasionally we find that we do not have a firm of consultants recorded which has the capabilities and experience of handling a problem submitted to us. We then attempt to find a professor with the knowledge and background to do the job. CIRAS cannot lose sight of the fact that the major responsibility of Iowa State University is to educate the youth of Iowa. We, therefore, make it a practice in most cases to contact the head of the department and check on the academic load of the professor or professors whom we wish to recommend to the CIRAS client. If we find that one professor is heavily loaded with academic work, we must then use only the name of the professor with comparable experience and a lesser academic load. When we do find the man that is available for this consulting job, we try to get him together with the CIRAS client and hope that they will negotiate a contract to the mutual benefit.

Occasionally we will have a situation where we are unable to find the talent in the State that is capable of giving the proper answer to the troubled industry or individual, we then, very grudgingly, go out of State on referrals.

In all situations, it is the desire of CIRAS to put those industries, or individuals, with problems in touch with the firms or individuals who can solve their problems.

In the situations just discussed, we have assumed that all industries, or individuals, who have come to CIRAS are able to pay for the services of a consultant. We do, however, have situations where small firms or individuals and some fairly good sized firms, are having financial difficulties, and find themselves unable to pay for the services of such a consultant. In these cases, CIRAS can serve in one or two ways:

1. We can utilize to the fullest extent the ability of our own staff.

2. We have a limited amount set up in our budget to retain specialists or professors as consultants to aid in areas where our staff is not adequate. In these situations the work is done without charge to the industry or the client.

This action is justified by the fact that employment is important to the local community, and the industry is important as a tax source to the State. Therefore, we believe that we are justified in attempting to keep this industry alive for Iowa.

One area of concern in our organization was that of duplicating the efforts of other State and Federal activities. We find that we are working very closely with the Iowa Development Commission. One activity of IDC is the Iowa Development Commission Foundation (IDCF), Inc., which has been established to aid inventors within the State by helping them with patent search and patent applications, preparation of models and prototypes of inventions, and development and placement of these inventions into production. Quite naturally our efforts are bent toward assuring that these inventions will be manufactured within the State of Iowa.

CIRAS works very closely with this group and at the time that it is ready to take an invention to a manufacturer, it is almost mandatory that we make contacts with the industry through CIRAS representatives working together with men from the IDCF, Inc. The Iowa Development Commission Foundation, Inc., has relieved a great deal of pressure and time-consuming effort from the staff of CIRAS.

Since July 1963 CIRAS has completely furnished its office and established office procedures for operation. One of the first items in our plan was to obtain for our files a complete roster of the consulting engineers and consulting firms in the State. This was done via the questionnaire route. We continue to gather data on these people including a résumé of the principals of the firms, a list of work done, capabilities, and the value of their projects. We also have a fairly complete roster covering the education, qualifications, and the experience in production and research of the professors in the College of Engineering at Iowa State University. We are now gathering this same information from the professors in the other colleges. We expect to have this same type of data on the professors that are willing and have a desire to help with our program in the other State-owned institutions of higher learning in Iowa, as well as the privately owned colleges and universities.

We have gathered similar facts on the certified public accountants, the patent attorneys, testing laboratories, advertising agencies, and architects. We will also tabulate information on other professions whom we expect to be using on a referral basis.

In establishing the format for the operation and organization of CIRAS, it was considered to be practically impossible to get the operation off the ground if we did not make personal contact with the industry that now exists in the State. We, therefore, divided our State into four sections and placed qualified field representatives into these specific areas. The major assignment of these field representatives until completed, is to gather pertinent data on every industry in the State.

We have stayed with SIC classification of industry and this is our bible for determining where contact should be made. The information that the field representatives gather from these Iowa companies includes all pertinent data which will be beneficial in handling requests for various types of help. Our field representatives also discuss with industry any problems which they may have. However, the major assignment on the initial contact in addition to advising industry of the availability of CIRAS, is to gather this information which we place on a retrieval system in our office.

The present staff of CIRAS is made up of nine men and two women. The administrative staff consists of myself and my secretary, who is responsible for my dictation, typing, and filings. Another stenographer serves the other professional staff in headquarters and acts as receptionist for the CIRAS office. She also does the clerical work on the retrieval system.

We have an industrial engineer who also has a masters degree from the Harvard School of Business and is responsible for the product development, production line organization, taxes, financial problems, and industrial management.

Another man in the office is a marketing specialist with minor degrees in advertising and economics. His field of operation is that of marketing and advertising. He is responsible for the professional review of all the records before they go into the retrieval system. He also has the responsibility of establishing the format for CIRAS brochures and reports.

The staff engineer is a mechanical engineer with experience in two industries. He is filling the billet which we have set up for a young man with 4 or 5 years' experience, who has a family and who is desirous of returning to the university for an advanced degree. We are able to pay him a bit more than the usual stipend of a scholarship. His major job, besides the professional assignments given him, is to make the actual contact with the professors of the other colleges of Iowa State on a counseling basis. This requested counseling time by the staffs of the various colleges has been given unstintingly. We find ourselves using the talents of the professors in home economics, science, agriculture, and veterinary medicine very often.

The other staff member working out of CIRAS headquarters is a chemical engineer who handles assignments along his professional line. He came to us with a background of experience in the rare-earth field. He is on the staff of CIRAS and the chemical engineering department on a half time basis with each.

The field representatives include one civil engineer, with a background of many years in municipal design, construction, operation, and administration, as well as background of industrial experience in product development, production line organization, and sales.

Another field man is an industrial administration graduate, who came to us from Collins Radio Co. in Dallas, Tex.

The third man is an industrial engineer with experience with Eastman Kodak Co. in Rochester, N.Y.

The fourth field man, who will join us on the 15th of June, has a background of agricultural engineering. His experience has been in industrial research with the Farm Equipment Institute, grain-processing machinery, and advertising and sales. This then gives you some idea of the qualifications which we have tried to incorporate into the limited staff which we are able to retain.

We are convinced that the field organization is imperative in accomplishing the mission of CIRAS. The fact that the field men have made over 2,700 contacts with various industries in the State of Iowa, will bear out this belief. We have also sent out two large mailings of a brochure, of which I have a few available in case you are interested. Good stories have appeared in the newspapers and industrial magazines of the State. These actions have resulted in over 670 inquiries of various types.

We also believe that it is important that CIRAS be generally known throughout the State. With this in mind, I have appeared before more than 85 groups, such as service clubs and industrial development organizations, and have told the story of CIRAS to over 4,700 people.

The source of the first 670 inquiries received and handled by CIRAS are as follows:

Source of projects:	Percent
From business firms and manufacturers.....	61
Individuals.....	30
Other Government agencies.....	6
Development groups.....	3
Total.....	100
Method of handling projects:	
CIRAS and ISU staff research.....	60
Referred to consultants (including engineers, CPA's, architects, testing labs).....	26
Referred to university professors (as a consulting project).....	14
Total.....	100
Types of problems associated with projects:	
Technical.....	47
Management.....	20
Inventions and new products.....	15
Marketing.....	12
Production.....	4
Design.....	2
Total.....	100

On April 23 of this year, CIRAS held the first meeting of its advisory council. This group consists of 21 men at the present time with 12 of them coming to the council from industry and of this 12, 2 of them are doubling in brass as representatives of industry and the Iowa Engineering Society. Two representatives of the Consulting Engineers Council of Iowa and the remaining seven include a representative of the Certified Public Accountants in Iowa, the Iowa Manufacturers Association, the Iowa Development Commission, the Des Moines Register & Tribune, and representatives one each from the State University of Iowa, the State College of Iowa and Iowa State University, outside of the college of engineering. At the first meeting of this council, a chairman and vice chairman were selected, bylaws were discussed and will be prepared for the next meeting. We believe that this group can serve as a sounding board for the activities of CIRAS and more closely coordinate our efforts to the needs of industry in the State.

CIRAS is not a panacea for all problems connected with industrialization of Iowa. In fact, it is only a small part. It does, however, open one channel of communication with industry and makes possible a direct and positive contribution by the university to the future health of Iowa's economy.

Mr. WEGNER. The State of Iowa is this month completing its second year of operating the Center for Industrial Research and Service, CIRAS, Iowa's service organization for industry. CIRAS is administered through Iowa State University, Ames, Iowa.

I would like to present to you today a brief rundown on the operation and accomplishments of the past 2 years by this new organization. I would also like to indicate to you how I believe the Technical Services Act of 1965 will be of assistance to the Iowa program and the Federal program in other States of the United States.

The problems of industrial growth require solutions using engineering and scientific technologies. This is obvious from the fact that almost daily some segment of industry, corporation or individual, makes inquiry at the university for technical assistance and guidance. In the past, or more specifically in Iowa, prior to the establishment of CIRAS, such inquiries usually had been only superficially answered. This situation highlighted the need for technical assistance to industry.

CIRAS counsels with industry on special problems, advises regarding appropriate procedures for product development, marketing, and production, and conducts research and testing programs when necessary. In addition, CIRAS provides technical and managerial information through publications and conferences specially oriented for industrial use.

The counseling services are without charge, although research or special projects would be paid for by the interested industry, depending on the need and the industrial potential for the State. In general, funds for the center are provided from State appropriations.

This type of program was approved by the Iowa State Legislature in 1963 and they appropriated \$250,000 as a general line in the budget of Iowa State University for the operation of CIRAS for a 2-year period.

It was my privilege and good fortune to be offered the position of the director of this new program. I took over these duties on October 1, 1963.

The Iowa State University administration did not, nor did the dean of engineering or the four engineering staff members who had done the initial study and planning hand me a format with the order that here was my organization chart—do something with it. They welcomed me to the campus, indicated that I must operate under the administrative rules of the university and that my main job would be determined by the needs of the State of Iowa for service to industry.

This type of freedom of operation was a major factor in getting the operation underway in a short period of time.

I believe this type of flexibility is available in the Technical Services Act of 1965, and it is my opinion that it is one of the real necessities for satisfactory accomplishment of the purpose of the bill.

We had been in operation for no more than 2 weeks before a committee from the Consulting Engineers Council of Iowa visited the office. (I think at this point I should point out that I am a graduate engineer and a registered professional engineer in the States of Iowa and Minnesota. I have been active in the Iowa Engineering Society and the National Society of Professional Engineers for many years and have served as president of the Iowa Engineering Society and vice president for the North Central Region of National Society of Professional Engineers. I am also a member of the American Society of Civil Engineers.)

The Consulting Engineers Council of Iowa had previously indicated serious misgivings and concern about the establishment of such an operation as CIRAS at Iowa State. It is my understanding that this objection originated in the national offices of the CEC. I welcomed the opportunity to discuss the program with this committee and offered to appear on a panel discussion of the program of CIRAS at the annual meeting of their State association. This panel discussion included a consulting engineer, the director of the Iowa Development Commission, and an industrialist and myself. The opportunity to discuss the program of CIRAS with this group of men was one of the most valuable public relations tools that a new organization could have been offered.

I was also given an opportunity to participate in the same type of program at the annual meeting of the Iowa Engineering Society,

which is the State chapter of NSPE, here I reached the many engineers who are not in consulting. This also gave the consultants who were members of the National Society of Professional Engineers an opportunity to check on whether or not I would tell the same story twice.

I am happy to say that I count the consulting engineers and the engineering profession as a whole to be the staunchest backers of the program which we have set up in Iowa. It is my belief that this group of people, the professional engineers and consulting engineers, stand to gain more than any other group outside of industry from the operation of CIRAS.

Problems to be solved and questions to be answered come to the CIRAS office either through personal contact, telephone call, or by correspondence. One or more members of the CIRAS staff review the problem presented to determine its scope and type (marketing, management, product development) and the length of time that they estimate it will take to solve the problem or find the answer.

If it is obvious that the problem will take more than 2 or 3 man-days of work, the staff automatically attempts to find a consultant, or a firm of consultants, that is in business in the State of Iowa and that has the capability and the experience to solve the problem. We attempt to give the names of at least two or three firms or individuals in each case, if we have this number on record.

If the firm or individual with the problem negotiates a contract with one of the firms or individuals referred to him by CIRAS, we then step out of the picture.

In order that we might do a good job for industry we felt that it was necessary to gather as much information as it was possible to put together and set it up on a retrieval type of system so that it would be available when questions would be placed with CIRAS. Working toward this goal we have a roster of the consulting engineers and consulting firms in the State of Iowa. In this information we have the data regarding a résumé of the principals of the firm, a list of the work done, capabilities, and the value of their projects. We also have a roster covering the education, qualifications, and the experience in production and research of the professors in all of the colleges at Iowa State.

We are now in the process of planning how to gather this same information on the professors in the various private colleges in Iowa, as well as the other State-owned institutions of higher learning.

We have gathered similar facts on the certified public accountants, the patent attorneys, testing laboratories, advertising agencies, and architects. We will also tabulate information on other professions whom we expect to be using on a referral basis.

We are putting together a rather complete record of every industry in the State. This information includes all pertinent data which we believe may be of value in understanding the industrial capabilities, potential, and problems.

These data are being gathered by the four field representatives of CIRAS. Our total staff, including the four field representatives, is nine men and two women.

Occasionally we find that we do not have a firm of consultants on record which has the capabilities and experience of handling the

problem submitted to us. We then attempt to find a professor with the knowledge and background to do the job. CIRAS cannot lose sight of the fact that the major responsibilities of the State's institutions of higher education are to educate the youth of Iowa. We therefore make it a practice in most cases to contact the head of the department and check on the academic load of the professor or professors whom we wish to recommend to the CIRAS client. If we find that one professor is heavily loaded with academic work, we must then use only the name of the professor with comparable experience and a lesser academic load. When we do find a professor who is available for the consulting job, we try to get him together with the CIRAS client and hope they will negotiate a contract to their mutual benefit.

In all situations, it is the desire of CIRAS to put those industries, or individuals, with problems in touch with the firms or individuals who can solve their problems. We are definitely middlemen.

As a sounding board for checking results of past performance and planning for future activities, CIRAS has organized an advisory council. This group consists of 21 men. Twelve of them come to the council from industry and of this 12, 2 of them are doubling in brass as representatives of industry and the Iowa Engineering Society. Two representatives of the Consulting Engineers Council of Iowa and the remaining seven include a representative of the certified public accountants in Iowa, the Iowa Manufacturers Association, the Iowa Development Commission, the Des Moines Register & Tribune, and representatives, one each from the State University of Iowa, the State College of Iowa, and Iowa State University outside the college of engineering.

We favor the adoption of the Technical Services Act of 1965. If the act is passed we anticipate the following benefits:

1. It will enable us to more adequately cover an area of great concern to the CIRAS staff and to industry, that of new product development, putting into practice some of the research and development of past and present years.
2. It will allow us to work more closely with the engineering extension service to develop and schedule conferences which will benefit industry.
3. It will aid us in working out a cooperative program with the other educational institutions in the State of Iowa.
4. It will promote a closer tie and ultimate regional development between neighboring States.
5. It will enable us to establish a much more personal distribution system for research and development information available currently through the Federal Government.
6. This act will offer an incentive for establishment of industrial service centers in those States currently without such groups.
7. Existence in all States of these groups will greatly facilitate the application of past, present, and future research development.

These are only a few of the obvious benefits which such a program would offer to the States. It could serve to aid in opening up a new channel of communication between industry, the Federal Government, and the individual States.

Mr. MACDONALD. Thank you very much for your fine statement, Mr. Wegner.

I was wondering why Iowa would actually benefit from this since they seem to be doing very well in this field at the moment.

Mr. WEGNER. We very definitely need some expansion in some areas. As I indicated we need to be able to work on product development.

Mr. MACDONALD. How would this bill affect that?

Mr. WEGNER. If we could work on a matching-fund basis with what we have and what they had authorized in the State legislation, we then could do more work in this area.

Mr. MACDONALD. Presently, how much is allocated to you from the State budget per year?

Mr. WEGNER. We started with \$100,000 the first year and \$150,000 for the present year and the budget will be very similar to this in the next biennium.

Mr. MACDONALD. As I understand it, the Federal Government would contribute between \$100,000 and \$150,000 each year.

Mr. WEGNER. That is right.

Mr. MACDONALD. Therefore you would be able to double your service?

Mr. WEGNER. Double the service; that is right, sir.

Mr. MACDONALD. Do you think that this is necessary or do you think what you are doing now pretty well covers the needs of the people of Iowa?

Mr. WEGNER. We are very definitely limited, sir. We need to have a more adequate distribution system for the information that is coming out of Washington, for instance. We also need to have or rather we are doing practically nothing in product development now because we just do not have the staff or facilities to do it.

Mr. MACDONALD. What is product development?

Mr. WEGNER. Product development is taking an invention after you have a model or a prototype and getting it to the point where it is ready to be manufactured. There are many things that have to be eliminated and improved on an invention or product before it goes into manufacturing and the start of spending a lot of money on tooling by the industry.

Mr. MACDONALD. You mean to say someone invents a new sort of machine?

Mr. WEGNER. That is right.

Mr. MACDONALD. And you would aid him in getting that produced?

Mr. WEGNER. We will try to get him—if he does not have the money to develop this and there are a lot of people that come into this picture without a dime—if through the elimination of a lot of products we come up on some two or three that need further development, we will take it just as far as we have to before that can go to an industry. This is what we hope to do with this type of thing.

Mr. MACDONALD. What form does your aid take in product development?

Mr. WAGNER. So far we have one firm in the State of Iowa that does this type of thing. So far the people that have had products have been able to pay a small amount for this development, and this firm has been able to take care of it.

We have done about three projects that we have worked with our own people. We have had to use part of our small budget to develop

this and one of them will result in a new industry in the State within the next 6 months.

Mr. MACDONALD. I am just taking this because I am sure when and if we bring this to the floor we will be asked similar questions. If the Federal Government comes into the picture as they would under this bill, who would approve what you are doing with the money?

Mr. WEGNER. The designated institution.

Mr. MACDONALD. It would not be controlled, as you see it, from Washington.

Mr. WEGNER. No, absolutely not.

Mr. MACDONALD. I hope you spread that gospel to your Iowa delegation because I know at least two of the members of the delegation will raise this question.

Mr. WEGNER. I would love to know this because we have talked to them and the bill is very definitely set up so that it is to be controlled by the State designated institution. This is the way it should be very definitely.

I feel quite strongly about this, as you can tell, because it could not have any other controls, really.

Mr. MACDONALD. No other controls are necessary.

Mr. WEGNER. That is right.

Mr. MACDONALD. And none are provided in this bill as you read it.

Mr. WEGNER. That is right. You will notice that I differed a little with the previous speaker in that I believe a broad brush in the bill will enable you to get this program underway and will end up in a better use of this program.

Mr. MACDONALD. Since we are exchanging information, I can also point out to you that a very broad brush makes it very difficult to pass a bill on the floor of the House.

Mr. WEGNER. I understand that, sir.

Mr. MACDONALD. Mr. Curtin.

Mr. CURTIN. Thank you, Mr. Chairman.

Aside from the product development angle of your work, it appears to me that the main purpose of CIRAS is to conduct a rather elaborate referral service.

Mr. WEGNER. Yes; this I would say is better than 50 percent of our work at the present time.

Mr. CURTIN. Is it a situation of some industry or some business having a problem, so they get in touch with you and you refer them to the proper consultants who you feel can help them?

Mr. WEGNER. Yes.

Mr. CURTIN. Do such people pay those consultants?

Mr. WEGNER. Yes; they develop a contract between the industry and the consultant and then we step out of the picture.

Mr. CURTIN. Do you people get a part of that fee?

Mr. WEGNER. No; no fee at all.

Mr. CURTIN. What has it cost you to run CIRAS since you have been organized?

Mr. WEGNER. \$100,000 in the first year and \$150,000 this year and our budget will be comparable, \$150,000 plus just a little bit for the next biennium. That is \$150,000 a year.

Mr. CURTIN. On this product development idea—do you get any reimbursement for the money you have had to spend in that feature of your work?

Mr. WEGNER. This is a detail we are working on. This is one of the real problems this advisory council will have to take hold of and help me with, because trying to determine where and how these charges are to be made is a detail that will be taken care of. Believe me every product does not develop and become a success. If we spend some money on a product and it becomes a success and they start making profit there should be some means provided whereby they would pay back the cost of the job that CIRAS has done for them.

Mr. CURTIN. Then it is your ultimate plan, that you would be reimbursed for any outlay you have made in this product development feature of your work?

Mr. WEGNER. That is right.

Mr. CURTIN. That is all, Mr. Chairman.

Mr. MACDONALD. Mr. Farnsley.

Mr. FARNSLEY. Thank you, Mr. Chairman.

When you say industry, does that include the service industries?

Mr. WEGNER. Yes. We stay with the SIC classification which is used here in Washington. We feel we have to do this because the Iowa Development Commission is also in the same classification. We cover and once in awhile it becomes a bit obnoxious to some of the fieldmen because I ask them to call on some of the industries that they feel we are not going to have any calls from, but we feel we have to make and have in our record every classification that they include in their record and the SIC classification.

Mr. FARNSLEY. I do not know anything about that. That covers everything?

Mr. WEGNER. That covers just about everything that you can think about on this type of thing. We work through out services I think more closely through getting the information on our retrieval system where we think we will be able to use their services and to refer clients to them to solve problems.

Mr. FARNSLEY. When you say services, you have lost me.

Mr. WEGNER. By services, I am thinking in terms of the CPA's and groups like that. Is this what you are thinking of, sir?

Mr. FARNSLEY. No. I am sorry.

Mr. WEGNER. What were you thinking of?

Mr. FARNSLEY. I am such a laymen, I cannot even ask the question. When I think of service industries, I think of restaurants, drycleaners, colleges, and things like that.

Mr. WEGNER. We do not go into the business areas at all such as merchants and this type of thing.

Mr. FARNSLEY. You call that business rather than service industry, is that right?

Mr. WEGNER. Right.

Mr. FARNSLEY. When I listen to you, I think schools of engineering should be in charge. When I listen to other people from the business schools, I think they should be in charge. So, I am open on this subject.

Is there a conflict? Are there two different areas, or what is it all about?

Mr. WEGNER. I do not think there has to be a conflict at all, Mr. Farnsley. Actually, one or the other has to be the designated institution, as I see it, and that institution then has to pull this program

together, utilizing every one of the other service groups such as the school of business and this sort of thing. We do not have a school of business at Iowa State, but the State University of Iowa does have a good school of business. If we are named as the designated institution, we will work in the 5-year plan a program utilizing all of their services. When a problem comes up for the school of business, we will refer to them this problem.

Mr. FARNSLEY. I am not trying to put words in your mouth. I am really trying to learn. Is it possible that the school of business concerns itself more with what I call service industries and you call business, and the engineering concerns itself more with manufacturing, which you call industry?

Mr. WEGNER. There is no separation of it, sir. They tie so closely together.

Mr. FARNSLEY. You are a Governor, and you have in your State a school of business and a school of engineering, both of equal competence. Which do you designate?

Mr. MACDONALD. Which did you graduate from?

Mr. WEGNER. I would definitely say the engineering. Let me elaborate a bit on that, if I may. We have found that in the inquiries we have had, a much higher percentage of them are in the technical area. By technical, I mean those whereby we would have to go to the college of engineering for help if we could not find a consultant. I would say that definitely it would belong in the school with a college of engineering.

I am not saying it would not work the other way, because one of them has to take the lead and utilize the other facility. Of course, I am prejudiced.

Mr. FARNSLEY. An engineer can advise you on things that I would call economic, and in sociology.

Mr. WEGNER. Right. We would go into the science and humanities group for help in that. I think you might be interested, too, that we have crossed every line at the university on inquiries that have come to us. We have gone to the psychology department. We have had to go to the agriculture department. We have had to go to the home economics department. We find it has to be crossed this way.

Mr. FARNSLEY. Thank you, sir, for your testimony.

Mr. MACDONALD. I would like to add that I think Mr. Farnsley has a very good point. It seems to me the training given by a business school and that given by a school of technology are completely at opposite ends of the pole. I did not write the bill, and perhaps I should be directing this question to the Department of Commerce, who are so interested in it, but there seems to me to be a great divergency in the skills of, say, the Massachusetts Institute of Technology and the Iowa business school.

Mr. WEGNER. As I see this bill, it is to set up an organization whereby these things can be tied together. I think this is a decision the Governor has to make as to who can best tie it together.

Mr. FARNSLEY. But he is a layman. He does not know.

Mr. WEGNER. He has to have his advisers.

Mr. FARNSLEY. Who are always laymen.

Mr. WEGNER. I do not believe it has to be separated as a school of business and a school of engineering.

Mr. MACDONALD. It is in the bill.

Mr. WEGNER. It is. It says they must have a school of business or a college of engineering. This is one of the requirements. The way I reason it out is that they believe these are the two areas—and we have found this to be true—either the technical design area or the marketing and business area. We think these are the important ones. One of these groups should be in charge of administering this bill for you in the State.

Mr. MACDONALD. Would you think a compromise the grouping of a business school plus a school of technology, would be more sensible?

Mr. WEGNER. I do not think it is necessary. I think if you have one organization—

Mr. MACDONALD. For example, I am sure I could name you thousands of graduates of Harvard Business School who would not know a machine tool from a rivet.

Mr. WEGNER. Right.

Mr. MACDONALD. How can they advise on problems that deal with production?

Mr. WEGNER. They must have on their staff either an engineer or a person with technical background so they can have that service available. I have a man on my staff who is an industrial engineer and is a Harvard School of Business Administration graduate.

Mr. FARNSLEY. He is both?

Mr. WEGNER. He is both, yes, sir.

Mr. MACDONALD. But that is unusual.

Mr. WEGNER. This is unusual.

Mr. FARNSLEY. How much staff do you have?

Mr. WEGNER. I have nine men and two women. Of those nine, four are field representatives.

Mr. FARNSLEY. Can you run down right fast their training? Yours is engineering?

Mr. WEGNER. Mine is civil engineering with background in construction, design, and municipal administration. I just told you about this industrial man with a business background. I have a man with a major in marketing and advertising, and a minor in economics. I have a mechanical engineer. In the field I have a civil engineer who has had experience in industry. I have an industrial administrator which basically is school of business type of development. I have an industrial engineer, and I am getting an agricultural engineer with a background in agricultural product development. Then I have a chemical engineer who has joined us from the rare earths field of industry.

Mr. MACDONALD. Yours is a type of operation that is not spelled out in this bill, because by the terms of the bill it says the Governor shall appoint an instrument of the State, either an accredited engineering school or an accredited business school. What you are saying and what you have done seems very reasonable. You have gotten people from different skilled backgrounds. I do not see that the Massachusetts Institute of Technology, as a concrete example, if designated by the Governor of Massachusetts, would then go and get a lot of people from the Harvard Business School to help them.

Mr. WEGNER. If they do not have an adequate budget to have a staff similar to this.

Mr. MACDONALD. I think they have the budget.

Mr. WEGNER. I think they could handle it, but I am thinking of smaller areas where they have only one man or a man on half time from one of the colleges to do this type of job. If this is the situation, then they have to do just what we have done, develop a roster of the availability of the talents in the State that they represent. You do with what you have, and then you do the best you can with the funds that are available.

Mr. MACDONALD. Mr. Keith, have you any questions?

Mr. KEITH. No questions, Mr. Chairman.

Mr. FARNSLEY. I might ask one more question. You say you have an industrial management man. What kind of school did he go to?

Mr. WEGNER. He took industrial administration at Iowa State.

Mr. FARNSLEY. That is not in either the business or the engineering school?

Mr. WEGNER. It is in the science and humanities at the present time.

Mr. FARNSLEY. So, of your whole staff, you have one man out of business school and one man out of science and humanities, and the background of the rest is engineering, except that one engineer has another degree.

Mr. WEGNER. Right.

Mr. FARNSLEY. I bet the guy who came from the school of business has his staff set up the same way. I am not fussing, but this is just the way things work. Believe me, I am a friend. The engineer's chief competence is in design and what, did you say?

Mr. WEGNER. In design and product development and administration.

Mr. FARNSLEY. What does that mean?

Mr. WEGNER. I should change that. In production line management. This is work in the industry itself, out in the factory.

Mr. FARNSLEY. How much competence does the engineer have in what you call business and I call service industry?

Mr. WEGNER. We try to find men who have a background in some of this, but their training does not always indicate that.

Mr. FARNSLEY. The school of business would be the first place to go to for that?

Mr. WEGNER. Right. That is where I would go for my help.

Mr. FARNSLEY. What percent of the dollar gross national product, if you know—there is no reason you should—is manufacturing and service?

Mr. WEGNER. I can tell you how they compare in two areas in Iowa, for instance. The two areas that we are talking about are agriculture and industry products. In 1964, the actual cost of the products of agriculture was \$2,600 million; and this has pretty well leveled off on a plane. Then for 1964 the value of the products of industry amounted to \$8 billion, and we are on a rising curve there. This does not answer your question.

Mr. FARNSLEY. When you say "industry," you mean "manufacturing"; do you not?

Mr. WEGNER. Yes.

Mr. FARNSLEY. Fortune magazine said a few months ago, projecting some work done by a man at Princeton, that "by 1985, one sector of the service industry," which they call the "knowledge industry," which is schools, colleges, publishing, radio, and television, "would be

half the gross national product." That leaves all the other service industries—stores, beauticians, you name it—and manufacturing was a small segment.

Mr. WEGNER. I cannot argue with that, sir.

Mr. MACDONALD. Thank you very much, Mr. Wegner.

Mr. Donald Marlowe, dean of engineering and architecture of Catholic University, and chairman of the Legislative and Government Affairs Committee of the National Society of Professional Engineers.

STATEMENT OF MILTON F. LUNCH, GENERAL COUNSEL, NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS, ACCOMPANIED BY WILLIAM D. PATTON, LEGISLATIVE COUNSEL

Mr. LUNCH. Thank you, Mr. Chairman.

I am not Dean Marlowe. I regret to say he could not return to day, Mr. Chairman, because of a conflicting engagement, and I have been requested by him to present his statement on behalf of the society, if that is agreeable to the committee.

My name is Milton F. Lunch. I am general counsel of the society. I have with me Mr. William D. Patton, who is the legislative counsel of the society. I will read Dean Marlowe's statement.

Mr. Chairman and members of the subcommittee, I greatly appreciate the opportunity to present the views of the National Society of Professional Engineers on H.R. 3420, the proposed State Technical Services Act of 1965.

My name is Donald E. Marlowe. I am dean of engineering and architecture at Catholic University, a registered professional engineer, and chairman of the Legislative and Government Affairs Committee of the National Society of Professional Engineers.

Our society is composed of more than 63,000 members, all of whom are qualified under applicable State engineering registration laws. The society's membership is affiliated through 53 State and territorial societies, and more than 450 local chapters.

We are particularly interested in the program proposed in H.R. 3420 because of its potentially great impact on the entire engineering profession. As a technical information dissemination program—which is what we have been told by administration officials is intended—we believe it would be of great benefit to industry, to the engineering profession, and to our society as a whole. However, if administered to provide federally subsidized technical or engineering services in direct competition with private firms or individuals, we believe the program would be highly detrimental, not only to the engineering profession but to the entire system of American enterprise intended to be helped by the bill.

Our society's views on this legislation can best be understood by reference to a policy statement approved by our executive committee on April 7, 1965, dealing with Federal assistance to States for engineering information dissemination programs. That policy statement reads:

The National Society of Professional Engineers endorses legislation and other activities designed to stimulate and assist the dissemination of current engineering information to industry through State educational institutions and other sources at the State or local level.

Federal assistance to the States for this purpose will serve to stimulate the economy and the efficient use of engineering technology and will be to the benefit of the general public through higher levels of employment, improved standards of living, and more efficient production for a competitive position in world markets.

Legislation to accomplish this purpose should insure that the Federal Government, through its financial assistance does not support engineering research or provide services to proprietary interests. Engineering information gathered and disseminated under the program should be made available to the general public and industry on a broad and general basis. An advisory council, including representation from the engineering profession, and industry, should be established at each level of operation of the program to monitor it for policy guidance and general direction.

Measuring the provisions and stated purpose of H.R. 3420 against these general principles, the National Society of Professional Engineers endorses the bill and supports its enactment. We strongly urge adoption of certain clarifying language, however, to assure that the bill will fulfill its intended information purposes and not be used as authority for Government-financed competition with private firms and individuals.

"TECHNICAL SERVICES"

We recommend that the phrase "technical services," where it appears throughout the bill, including the title set forth in section 19, be amended to read "information services". While this is basically a change in form, and not in substance, we believe it is very important, and would help materially to assure the correct interpretation and application of the bill's provisions.

"Technical services" are defined in section 2 on page 2, line 15, of the bill as "activities or programs designed to enable business and industries to acquire and use scientific and engineering information effectively" through various designated means. The emphasis throughout the bill itself, is on the dissemination of information. Even the preface to the bill states that its purpose is "to promote economic growth by supporting State and regional centers to place the findings of science usefully in the hands of American enterprise." The use of the term "technical services," then, introduces ambiguity which we feel is dangerous. Technical services, in its common meaning, implies services such as those rendered by professional engineers and other technical people in private practice.

Since the phrase "technical information" more accurately describes what is intended, we urge that it be used instead. This will help avoid the danger of the bill's being misinterpreted to put the Government in direct competition with engineers in private practice.

SECTION 5(e)

We recommend, too, that section 5(e) which is on page 7, line 5 of the bill, be amended to eliminate several similar ambiguities. That section now provides that the Secretary of Commerce shall not accept an annual program for approval unless it is certified that the administering institution has "determined that such * * * program does not provide a service performed as practicably by private technical services, professional consultants or private institutions." This language is a highly important part of the bill. It constitutes the only specific safeguard against possible use of the legislation as authority for providing services in competition with private firms or

individuals. Yet, the limiting phrase "as practicably" is so subjective, and subject to such broad interpretation, that it would give the administrator in each State almost complete and unlimited discretion in applying—or not applying—the entire section in any given case. While some discretion is necessary in the administration of any legislative program, we believe that "as practicably" is far too broad, and that a different standard should be provided.

Another ambiguity in section 5(e) is created by use of the word "performed." This word apparently would include services which have been performed, or which are being performed, but it would seem to exclude services which may be performed. Since there are many services which are not actually being performed by private firms or individuals today, but which readily can be, when the need arises, we feel the word "performed" should be eliminated from the bill. Otherwise, it could result in the development of Government-financed competition with professional engineers in private practice.

Both of these potential problems—created by the phrase "performed as practicably"—could be avoided, we believe, by changing section 5(e) to read: "determined that such program does not provide a service available from private technical services, professional consultants or private institutions."

SECTIONS 5(f) AND 2(a)(2)

The other amendments our society feels are necessary relate to section 5(f) and section 2(a)(2) of the bill.

Section 5(f) on page 7, line 9 of the bill, requires that when an annual program is submitted for approval the State certify that the administering institution has "planned no service specially related to a particular firm or company except insofar as the services are of general concern to the community, State or region." We fully support the portion of this section prohibiting services specially related to a particular firm or company. However, we feel the exception which follows is so broad that it weakens the prohibition almost to the point of destroying it. Practically all technical information services—whether they are specially related to a particular firm or not—can be held to be of general concern to a community. We recommend that this exception be dropped, and that section 5(f) simply require the State to certify that it has "planned no services specially related to a particular firm or company, public work, or other capital project." We suggest that "public work or other capital project" be included so that the section will conform to other provisions in the bill limiting services to businesses and industries.

Finally, we recommend that subsection 2(a)(2) which is on page 2, line 21, be reworded to clarify its meaning and thereby reduce the possibility of its being interpreted as authorizing services in competition with private firms and individuals. We suggest that this part of the definition of technical services—or, to use our recommended language, "information services"—be revised to read: "establishing State or regional technical information centers to prepare and disseminate reports, abstracts, computer tapes, microfilms, reviews, and similar scientific and engineering information." This change, we believe would make the meaning of the subsection clearer, and bring language into greater conformity with the other parts of section 2(a).

In brief summary, Mr. Chairman, the National Society of Professional Engineers supports enactment of H.R. 3420, but urgently recommends adoption of the clarifying amendment we have proposed here to help assure that the legislation achieves its intended purpose. With these amendments we think this would be an excellent bill, and one which recognized and protected the diverse interests involved, while helping to provide industry with the scientific and technological information it must have if our economy is to prosper and grow.

We appreciate this opportunity to present our views on this important legislation, and will be happy to furnish any additional information or comment the committee may desire.

With the committee's permission, I would like to submit for the record, and for the committee's convenience, a 1-page attachment to this statement listing the specific amendment we have proposed.

Mr. MACDONALD. Without objection, the attachment will be included in the record at this point.

(The material follows:)

AMENDMENTS TO H.R. 3420 PROPOSED BY THE NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

1. Substitute "technical information" for "technical services" throughout the bill as follows:

Page 2, lines 5, 11, 15.

Page 4, lines 10, 21.

Page 5, line 22.

Page 6, lines 11, 16, 24.

Page 7, line 7.

Page 8, lines 13, 18.

Page 9, line 6.

Page 10, lines 10, 20.

Page 11, lines 3, 12-13.

Page 12, line 25.

Page 13, line 12.

Page 14, lines 8-9.

2. Amend section 5(e) to read: "(e) determined that such program does not provide a service available from private technical services, professional consultants or private institutions."

3. Amend section 5(f) to read: "(f) planned no services specially related to a particular firm or company, public work or capital project."

4. Amend subsection 2(a)(2) to read: "(2) establishing State or regional technical information centers to prepare and disseminate reports, abstracts, computer tapes, microfilms, reviews, and similar scientific and engineering information."

Mr. MACDONALD. You have certainly stated the position of the National Society of Professional Engineers very clearly, but I have some questions in my own mind if the position is correctly stated.

As written, you feel, apparently, that the bill would put the Federal Government or the State government in direct competition with engineers? I do not quite understand that.

Mr. LUNCH. We suggest, Mr. Chairman, that it would be possible. This would be administered at the State level, and we read the language of the bill that it would certainly be possible under the present wording in some places for a designated institution in its program to undertake engineering-type programs which are normally performed by private consulting engineers.

Let me give you a specific example. The language in the bill refers, as I read in the statement, to an exception. You recall there is a prohibition that the plan may not include certain types of services.

Then there is an exception which says, paraphrasing, except where it is in the broad general community interest. Under this exception it is certainly possible, as we read it, that an institution in a State could say:

A certain city, a small municipality in a State, needs a new water system. Under this bill we can provide this service. We can design a new water system for this community.

We are told by the administration officials with whom we have conferred that this is not the intent; that this is not the purpose. We are sure this is correct, but we suggest that the language of the bill be a little more specific to avoid the possibility of this type of thing occurring.

Mr. MACDONALD. Actually, unless my analogy is incorrect, you would say that a lawyer hired by the Government to work for the Government, in the service of the Government, say a labor lawyer working for the National Labor Relations Board, who helps individuals who need help because the law has been broken, would be in competition with private lawyers. Is that right?

Mr. LUNCH. If I follow your analogy, which I think may be a good one, Mr. Chairman, having some relationship myself to the legal operations, a lawyer for the National Labor Relations Board will certainly converse with a person or a firm or a company that has a problem under that law to advise him of what the law provides, what his rights are and what the procedures are in administering that law. This is perfectly proper, normal and accepted.

On the other hand, if this lawyer working for the NLRB undertook in the name of the NLRB to go out and consult with a private company on its labor relations policies, I think you would hear quite an uproar from the American Bar Association.

Mr. MACDONALD. On the contrary, it happens every day, because usually a company has a private law firm representing them. When the law has been violated or there is reason to believe that perhaps it has been violated, that is exactly the process that is followed.

Mr. LUNCH. Right.

Mr. MACDONALD. The Government lawyer talks to the company's lawyer and either he gets them to change what they are doing or, if they insist on doing it, he brings it to a forum in which it is decided who is right, the Government lawyer or the company lawyer.

Mr. LUNCH. I am afraid I did not make my distinction clear. This is all in connection with whether the company has violated certain provisions of the Labor Relations Act. It is the function of that agency and, therefore, the function of this lawyer to deal with that problem. My analogy was that if this lawyer from the NLRB, in the name of the NLRB, gave general advice on labor policy to a company, having no relationship to a charge of unfair labor practice or certification of elections or anything else covered by the law, he would be going outside of the function of that agency.

Mr. MACDONALD. I do not want to get involved in these labor relations problems, but once again I point out it is exactly the function of the Board to make known the application of the Taft-Hartley law.

Mr. LUNCH. I agree.

Mr. MACDONALD. He does that. A regional attorney goes out and gives speeches in which he goes into detail about what can and cannot be done under the law.

Mr. LUNCH. We are in full agreement, Mr. Chairman.

Mr. MACDONALD. I will not pursue it because I have made my point.

Secondly, what I had in mind is that it would seem to me that this would give employment perhaps to members of your Society of Professional Engineers by reaching a new market. If the testimony which has been given before the committee is to be believed, and I think it should be believed, it reaches a whole new market of people who have not been able to avail themselves of the services of professional engineers or have not had the money to. That is the intent of the bill, in my judgment.

Mr. LUNCH. We are sure this is correct.

Mr. MACDONALD. I would think it would help the professional engineers, not injure them.

Mr. LUNCH. I think this is true, and I would like to point out, Mr. Chairman, if it is not clear, that we are endorsing the bill.

Mr. MACDONALD. I am happy to hear that.

Mr. LUNCH. We are definitely endorsing the bill. We are only suggesting what we think is some helpful or clarifying language to deal with some concerns that have been expressed.

Mr. MACDONALD. Could I ask you a question on that point? What if all your amendments which have been read into the record and have been made a part of the record in your attachment, are not adopted? Would the engineers still endorse the bill?

Mr. LUNCH. I would say those who are in private practice would be greatly concerned. Frankly, I cannot predict what the society's board of directors would do in the ultimate, but the private practice segment would be concerned about the possible dangers here of opening the door to competition through the Government, which we are told and we believe from the language of the bill is not intended.

Mr. MACDONALD. I am sure it is not intended.

Mr. LUNCH. All we have tried to suggest is that some language changes would help to clarify the meaning and intent of the bill.

I listened with great interest this morning to the discussion and the questions raised by the members of the committee which seemed to me to raise a very fundamental point which I think is relevant to our presentation. That is whether this bill is really a technical information dissemination program, which we understand it to be, or whether it is intended to be something much broader and get into the general areas of aid of all kinds and types to business. I would just like to comment on that earlier discussion, that it seems to us as we read the language of the bill, particularly the definition of technical services which refers to utilization of scientific information, even though business schools are mentioned as being qualified, the real purpose of this bill, as we see it, throughout, is to provide a program of dissemination of technical and scientific information as distinguished from accounting, personnel, labor relations, or other management problems.

I just venture as my own comment—it had not occurred to us in our committee deliberations this was a problem, so this is strictly my own comment, and I address this somewhat to Mr. Farnsley, who indicated considerable interest in this point—that these other areas are being taken care of to some extent through the Small Business Administration programs and perhaps other programs in the Government, and if this element becomes a major factor in the history of this

bill, then I think it is a change from what was originally intended, to open up a complete aid to industry program involving marketing, production, labor relations, legal problems, accounting problems, warehousing, packaging. There is almost no end to the list of problems of industry and of service industries that could be encompassed here if that is the final outcome.

Mr. MACDONALD. Since you are putting it on a very iffy basis, I will ask you an iffy question. If that were the case, do you think it is necessarily wrong per se that the Federal Government or State government try to help business?

Mr. LUNCH. No; I do not think it is necessarily wrong. I know the Government is doing a considerable amount of work in this area today through the Small Business Administration, to name just one. The question before the committee on this point I think is whether they want a broad bill of general assistance of this type or whether, if our understanding is correct, this is to be a limited-purpose bill to provide basically a system for the dissemination of technical information.

Mr. MACDONALD. I know business for many years has said it is discriminated against; that every other segment within the United States is helped and business is not helped.

Mr. FARNSLEY. Persecuted.

Mr. MACDONALD. I would not go that far. Businessmen are not that rabid in any area. But they do feel that they are not helped to the extent others are by the Federal Government.

Mr. LUNCH. Their complaint may be fully justified.

Mr. MACDONALD. I was wondering if you think they should not be.

Mr. LUNCH. No, sir; not at all. I am not saying that. I am merely saying that, to me at least, this is a different concept than the concept that we believe was intended to be written into this bill, which is a bill to provide for the dissemination of technical information to industry through the State institutions.

Mr. MACDONALD. Where does it say that in the bill?

Mr. LUNCH. The definition on page 2, starting on line 15, says:

technical services means activities or programs designed to enable businesses and industries to acquire and use scientific and engineering information more effectively.

Then it spells out the various means of doing this, but that is the basic definition.

Mr. MACDONALD. You are putting emphasis on the word "information," and I would put emphasis on the words "acquire and use."

Mr. LUNCH. You have to say acquire and use something, though.

Mr. MACDONALD. Yes; scientific and engineering information.

Mr. LUNCH. The question, I think, is whether it is contemplated that this language, "scientific and engineering information," would encompass packaging problems. It might be. There might be a technical problem there, or accounting problems.

Mr. MACDONALD. We do not have to read the whole bill, but just paragraph 1:

analyzing programs of regions and industries to determine new opportunities for applying technology.

It is not strictly information.

Mr. LUNCH. Again I come to the definition, Mr. Chairman, which to me is the controlling thing in what they can do under this program. What they can do under this program is provide programs——

Mr. MACDONALD. I think if you go to (4):

sponsoring industrial workshops, seminars, training programs, extension courses, demonstrations and field visits——

Mr. LUNCH. As I see it, these (1), (2), (3), and (4) listed subsections are means to carry out what it says in section 2(a).

Mr. MACDONALD. Which is how to run a business most effectively in a modern technological era. I think that is the sum and substance of the bill. So, it is not just putting out a newspaper saying there are 3 million people with incomes of under \$2,800 in the southeast section of Massachusetts. I think it goes much further than that, and should.

Mr. LUNCH. May I point out, Mr. Chairman, for instance, in subsection (2) under 2(a), again you see the language "and similar scientific or engineering information." Then under subsection (3), "to identify sources of engineering and other scientific expertise." Under (4), referring to the workshops and seminars, "the more effective application of scientific and engineering information." To me, the bill is shot through with this.

Mr. MACDONALD. You emphasize the word "information," and I emphasize the word "application."

Have you any questions, Mr. Keith?

Mr. KEITH. I share your concern for the potential competition that this measure could give to private firms in the business of analyzing problems of regions and industries. The object of such analytical processes to determine new opportunities for applying technology, to acquire and use scientific and engineering information more effectively. What they do to accomplish this very worthwhile objective could be interpreted by industry and private engineering firms as a potential threat to a legitimate business.

I would like to ask you, therefore, the question: Would you, as an association, withdraw your support if none of your amendments prevailed? Would you vote for the bill in its present form?

Mr. LUNCH. Fortunately or unfortunately, I am not in a position to cast a vote.

Mr. KEITH. We are quibbling here. Would you support it, instead of "vote"?

Mr. LUNCH. Yes, I understand your question. I really cannot answer it, Mr. Keith, because this would have to be determined by the society's board of directors. All I can say is that I think, having discussed this at great length with our various committees and groups, the consulting segment would be greatly concerned if something was not written in to clarify what they see is a possible danger.

I would like the record to be clear, Mr. Chairman, that we are not saying this will happen. As a matter of fact, we know it has not happened in the Iowa program. I may be a little prejudiced here because Mr. Wegner is a former vice president of our society, a very esteemed member, and he understands this problem thoroughly and I am sure he would lean over backward to avoid its happening.

I also know in his program, as he stated, this activity in Iowa has actually helped the consulting engineers. There is no question about it.

Mr. MACDONALD. That is the point I tried to make earlier.

Mr. LUNCH. But Mr. Wegner, unfortunately, perhaps, cannot run this program in every State. We have confidence that many other engineers will be just as diligent as he, but there is this potential that in some places, in some circumstances, the program can be interpreted, if I may use the illustration, to provide the design of a water system for a municipality in a State, when this is not intended.

Mr. MACDONALD. Everyone is entitled to their own opinion about a bill and its effect, but I think that is terribly farfetched. Where could be read into this bill that a waterworks system could be prepared by the State together with matching funds from the Federal Government?

Mr. LUNCH. In the language which provides for certain exceptions, which is section 5(f), if I may turn to that. Starting on page 6, section 5 has a number of restrictions. The Secretary will require these to be set out in the plan. Section 5(f) is one of the restrictions.

Plan no services specially related to a particular firm or company, except insofar as the services are of general concern to the community, State or region.

All we are saying is that a water system or a sewer system or a highway system or an electrical system for a municipality is certainly of general concern to the community, and if some administrator wished to do so, he could read this language to say this is a matter of general concern to the community and, therefore, we are not restricted and we can do this.

Mr. MACDONALD. I would point out to you, because you have to read back to the beginning of section 5, any Governor, at least any Governor of Massachusetts, who decided to build a water system for any city or town in Massachusetts would not be reelected.

Mr. KEITH. If he came from Boston?

Mr. MACDONALD. No, it would not matter if he came from Boston or not. Obviously, that is a community responsibility, as you point out. It would take a great stretch of this language for it to fit the illustration you used, to do something for a community which is building a plant or giving that sort of assistance to a community. I respectfully beg to disagree and say that I think you are completely wrong in that interpretation.

Mr. LUNCH. I do not think we disagree too much, Mr. Chairman. I think we agree on the intent. I am glad to have it in the record that this is the intent. Perhaps the only place where we disagree is that we say it could happen.

Mr. MACDONALD. I say it could not happen.

Mr. LUNCH. Similar things have happened under certain statutory language where an administrator at some level reads it a different way than the committee in Congress intended. We are just trying to pin this point down as well as the other main point we make. I think this a basic policy decision for the committee.

Mr. MACDONALD. I agree with you in principle that the bill is written in fairly broad and perhaps too broad language. If I had any fault to find with the bill, and I do have some, it is that it is too broad in language. But I think your illustration is even broader than the language.

Any further questions, Mr. Keith?

Mr. KEITH. No, thank you, Mr. Chairman.

Mr. MACDONALD. Mr. Farnsley?

Mr. FARNSLEY. When you say "industry," you mean manufacturing?

Mr. LUNCH. We understand the bill to be aimed primarily, Mr. Farnsley, at the manufacturing industry.

Mr. FARNSLEY. I am not asking what you think about the bill, sir. In your presentation you use the term "industry." What does that mean?

Mr. LUNCH. I would say it encompasses primarily manufacturing, but may also include transportation, communications, distribution, and similar activities.

Mr. FARNSLEY. The bill says business and industry, so paparently it makes the same distinction you do. All the service industries and everything else, but manufacturing, transportation, and so forth. When the bill says "technical services," this means scientific services, not the social sciences, not psychology. In other words, you consider them not scientific and, therefore, not eligible under this bill?

Mr. LUNCH. They are not.

Mr. FARNSLEY. Is that correct, sir? Is that what you say?

Mr. LUNCH. That is correct. They may be scientific if you think of it in terms of social sciences, but they are not scientific in terms of this bill.

Mr. FARNSLEY. Under this bill, it is not technical.

Mr. LUNCH. That is correct.

Mr. FARNSLEY. I am not fussing. I want to clear it up. I am trying to help you. I am trying to get the engineers out of it. You say that you are afraid that under this bill some State, some administrator, some institution might be tempted to design a waterworks.

Mr. LUNCH. They could.

Mr. FARNSLEY. Which, in your opinion, would be the most apt to be tempted to design a waterworks—the Harvard School of Business or the Massachusetts Institute of Technology?

Mr. LUNCH. That is a loaded question.

Mr. FARNSLEY. Yes, sir.

Mr. MACDONALD. I think there is only one answer.

Mr. LUNCH. Both being very eminent and distinguished institutions, I do not think either one would get involved in a situation like that.

Mr. FARNSLEY. I thank you.

Mr. MACDONALD. Mr. Curtin?

Mr. CURTIN. Thank you, Mr. Chairman.

Sir, if you delete subsection (4) in the description of technical services, does not the remainder of section (a) pretty well define the functions of a private firm of consulting engineers? In other words, do not consulting engineers do practically everything set forth under (a) in behalf of a client, with the possible exception the provisions of subsection (4)?

Mr. LUNCH. I think they do, to some extent at least, not all of them but various private firms often analyze problems of industry or are retained by a regional authority or a State agency or a local agency to make a feasibility study or an economic study. This is very commonly done; yes, sir, (2) preparing and disseminating technical reports. I do not know that that quite fits into our discussion. This is a method of disseminating something which you have

done. Certainly (1) applies to your point. (3) I think very likely would apply to private firms. They could and very often do a research job to identify sources of information. This is not unusual. I agree with you, I do not think (4) applies. Normally a consulting firm would not sponsor or put on seminars, although they might be retained to work up certain technical seminars or programs for industry, for continuing education purposes or something of that nature. But not usually.

Mr. KEITH. Have you heard of Science Research Associates?

Mr. LUNCH. I think I have seen the name or heard the name.

Mr. KEITH. They are an educational consulting firm which does this kind of work that you just referred to. The company was recently picked up by IBM for \$38 million, and is implementing the Job Corps training program for upgrading citizens so they can find jobs in industry. They will undertake any program, I think, without any reservations.

Mr. LUNCH. Yes, I am sure there are many organizations that would undertake and do undertake presently various training programs for various clients.

Mr. CURTIN. So, you are really saying, then, that the description of technical services, with the subsections as is, could apply to the work of a private consulting firm of engineers?

Mr. LUNCH. Yes, sir; I think that is correct.

Mr. CURTIN. In relation to a private contract of such a private firm with a client who wanted certain information?

Mr. LUNCH. I think in many cases they do and certainly they could do almost all of the things that are indicated here.

Mr. CURTIN. That is all, Mr. Chairman.

Mr. MACDONALD. I thank you for appearing before us, and in conclusion I would like to point out the amount of money in the bill I think would vitiate against the problems that your society thinks might occur. There is not that much money involved.

Mr. LUNCH. If I may comment, Mr. Chairman, I think this is an open-end bill as far as money is concerned. There is a provision for \$25,000 to each institution to develop a plan, but the actual implementation program is open end. It merely says Congress shall appropriate such funds as are necessary or some language of that type. This is a general authorization.

Mr. MACDONALD. The authorization would be included in the bill. The Secretary of Commerce yesterday, if I recall his testimony, said that the first year was \$30 million.

Mr. DIXON. He was using the figures \$10, \$20, and \$30 million for the first 3 years.

Mr. MACDONALD. With \$30 million at the top to be spread among 50 States, I do not think you can build many waterworks.

Mr. FARNSLEY. Mr. Chairman, do you think under this bill these agencies could contract to do these things? I think they could. The University of Louisville is working with the engineers all the time. They take contracts to do engineering work. Could not these agencies contract to do engineering work and thereby have extra money?

Mr. LUNCH. I would give my opinion. I think they could, Mr. Farnsley. I see nothing in the bill to prevent the institution from doing some of this function by contract with any other organization, whether it be another university or private firm, or industry.

Mr. MACDONALD. In my discussion with Mr. Wegner, I pointed out that if the Governor of Massachusetts selected Harvard Business School, they would have to contract some things out to engineers because they do not have the engineering services in that business school.

Mr. LUNCH. I would assume it would be contemplated in most programs that there would be some contracting for specialized assistance.

Mr. KEITH. As a matter of philosophy, I would like to ask a question here. In the provision that you mentioned with reference to \$25,000 a year for each of the first 3 fiscal years, without any restriction. It would be an outright grant would it not?

Mr. LUNCH. It is my understanding it would be an outright grant to help the institution develop a plan for submission to the Secretary.

Mr. KEITH. Can you imagine any State anywhere, knowing they could apply for a \$25,000 grant, which is really a \$75,000 grant, not making the application?

Mr. LUNCH. It would be very difficult to imagine that situation. I say this from the standpoint of having been exposed to similar programs over the years. Most States, I think, would logically feel they might as well get their proper share. Congress has authorized it. I do not mean to say this in a cynical way. I am sure the intention in all cases would be to develop a good, constructive program.

Mr. KEITH. It has always been my belief that if any program of this sort is good enough for the State to undertake a serious study, they should be required at least to put up matching funds so the State pays for some of the value it receives. We had this problem, you may recall, Mr. Chairman, in the case of educational TV. The bill originally was written to provide \$10,000 for every State, regardless of whether or not they wanted educational TV or needed it. I feared, and the committee shared my concern, that any State, even though it was working jointly with another State, would find some way to use that \$10,000. The Governor would have the authority to undertake a contract with a private firm to conduct a study which would result in a recommendation to go ahead or not to go ahead with the program which would follow. The same thing could exist here. I am somewhat concerned that any Secretary would make such a broad or unrestricted approach as this.

Mr. LUNCH. This would be a personal opinion, Mr. Keith. I would feel, as you do apparently, that if a State is seriously interested in developing such a program, \$25,000 is not a large sum of money for most States, or I would say even all States, if they are really serious, or half of that amount, for them to put up a matching fund to get the thing started. I would assume that most States would be willing to do this if they were really serious about developing a good program.

Mr. KEITH. We are talking of roughly \$1,250,000 a year times 3, which would be \$3¾ million.

Thank you, Mr. Chairman.

Mr. MACDONALD. Thank you.

Mr. LUNCH. Thank you very much, sir.

Mr. MACDONALD. The statement of James S. Hostetler, of the New England Council, will be submitted for the record at this point.

(The statement follows:)

STATEMENT OF JAMES S. HOSTETLER OF THE NEW ENGLAND COUNCIL

Mr. Chairman and members of the committee, my name is James S. Hostetler and I am appearing on behalf of the New England Council, a private, nonprofit organization with offices in Boston, Mass. The council is composed of 2,200 members drawn from business, labor, education, and government within New England, and is devoted to the development of a sound and dynamic region through utilization of all human, natural, and material resources. With New England's economic development as a focus, the organization seeks to identify the region's broad public interest and to promote appropriate programs of action to implement its findings.

Since its formation at the recommendation of the New England Governors in 1925, the council has sought common, regionwide solutions to the six States' problems and has supported opportunities for regional development. The council is, therefore, interested in H.R. 3420, the proposed State Technical Services Act of 1965.

The proposed bill would authorize the Federal Government to make grants to States to support programs to make better commercial use of the latest findings of science and technology. These technical services programs, planned and executed locally, would put this important information in the hands of local industry and business. To qualify for Federal matching funds, a State would designate an institution or agency to prepare and administer the technical services programs within the State. However, section 7 of the bill would provide authority for two or more States to cooperate to designate a regional institution and 10 percent more Federal assistance would be available for the regional institution through nonmatching Federal grants. All qualified institutions in the State or region could participate.

The rapidly changing role of science and technology and its impact upon economic growth has long been recognized as an important asset in the New England area and the rapid growth of new technical enterprises, many of which have arisen as a result of federally sponsored activities, has made an important contribution to the New England economy. More is possible. In recognition of the increased importance of science and technology in regional economic development, the New England Council has recently established a committee on science and technology under the chairmanship of Richard S. Morse and with representatives from the industrial-academic-financial community. This committee is studying ways to enhance the effectiveness of the New England Council through the improved use of new technology and advanced management concepts. We believe that an important aspect of such activities involves the use of systems management methods and a high order of technical planning on a regional basis.

We fully recognize the importance of Federal activities in the field of research and development and are aware of technological advances resulting from programs of Federal departments and agencies, including NASA, AEC, the Departments of Defense, HEW, and Interior, and others. It is, however, abundantly clear that such activities, regardless of their scientific significance, are, in fact, useful to the community only insofar as new products and processes can be introduced into the civilian sector.

This process of introduction should be accelerated by the proposed bill with at least the following advantages to the New England region:

1. By upgrading further our industries through making more readily available information about recent technological developments, the region's economic and industrial base should be broadened and strengthened.
2. Facilitating the industrial use of new technology and the manufacture of new products should increase employment in the region.
3. The competitive position of New England products should be enhanced on the world market.

Commercially significant products will not evolve from research programs without a strong cooperative effort including universities, communities, industries, and the Federal Government. We think such cooperation to be most effective should take a regional form. Cooperation on a regional scale has become increasingly important in trying to fashion adequate solutions for such complex and diverse problems as ground and air transportation, stream and air pollution, recreation, and power development. New England with its wide experience in successful interstate achievement, can be expected to implement the technical services proposal in a way designed to make maximum use of interstate cooperation.

While New England has unique educational facilities and technical competence, it is important that these resources be made available to the region as a whole,

particularly to areas and industries more remote from and less familiar with advances in science and technology which may have special relevance for them.

With changes in the character of our defense effort and perhaps its dollar value, the problem of technology transfer becomes even more urgent. New England has many examples of large defense facilities or industries dominating a local area's economy. Better diffusion of new techniques and knowledge can help in the diversification and strengthening of local industry and help prevent economic disaster from occurring should a defense slowdown or cutback occur.

Accordingly, we believe H.R. 3420 can contribute to the continuing efforts of New England to find improved means to strengthen all segments of its economy and all geographical units in the region, and in the process make an even more significant contribution to the overall economic growth of the country.

Mr. MACDONALD. All witnesses having been heard, the hearing is adjourned.

(The following material was submitted for the record:)

THE SECRETARY OF COMMERCE,
Washington, D.C., June 22, 1965.

HON. TORBERT H. MACDONALD,
Chairman, Subcommittee on Commerce and Finance of the Committee on Interstate and Foreign Commerce, House of Representatives, Washington, D.C.

DEAR MR. MACDONALD: I am happy to provide you with the additional information you requested in your letter of June 3, 1965, as to our plans for implementing the State Technical Services Act of 1965.

To develop and carry out the Department's responsibilities under the act, I propose to establish a new organizational unit (tentatively entitled the Office of State Technical Services), headed by a Director who will report to the Assistant Secretary for Science and Technology. The Director will be an individual well experienced in engineering or scientific administration, and the position will probably be established at the GS-18 level.

The Office of State Technical Services will be responsible for carrying out all functions under the act. Its major functions will include:

1. Allocation of funds to each State to assist in the development of its 5-year plan for technical services, as authorized by section 11(d); consultation with States on plan development;
2. Review and approval of State plans and programs, and allocation of annual Federal matching grants to designated institutions, as authorized by section 11(a);
3. Development and approval of "special project" grants, as authorized by section 11(b);
4. Encouragement of regional and interstate programs, and allocation of additional 10 percent grants, as authorized by section 8;
5. Development and issuance of rules and regulations pertaining to Federal grants for State technical services, as required by sections 6, 11, and 13;
6. Development of a reference service to assist States to obtain scientific, technical and engineering reports, advice, and consultation, as authorized by section 12.

The act provides that the costs of the first five functions listed above cannot exceed 5 percent of the funds appropriated to carry out activities under section 11. Total staffing for these "direct administration" functions for the first year of the program will be limited to 21, with an additional 11 positions required for the technical reference service.

The Department will take full advantage of its existing staff resources in carrying out the act. Most administrative support services (budget, personnel, etc.) will be obtained from the Department's central administrative staffs. The new Office of State Technical Services will rely on the Clearinghouse for Federal Scientific and Technical Information to service State requests for technical publications and to help stock the technical reference depositories many States will establish. Under the act, the Clearinghouse will also expand its documentation services to cover selected areas of research sponsored by business and universities, as well as federally supported research. The Office of State Technical Services will reimburse the Clearinghouse for these additional costs it will incur, and the Clearinghouse may consequently need to expand somewhat its clerical employment to perform its contracted work. The Office will itself provide, or obtain, the technical consultation, training, and other forms of referral assistance which States request.

The above information covers in part the questions raised in your letter as to the relationship of the Clearinghouse to the State technical services program. The Clearinghouse now has a staff of 292, and a budget of about \$4,400,000 annually. This includes \$1,130,000 in direct appropriations, \$1,100,000 derived from sales of documents, \$2,100,000 estimated reimbursements from the Department of Defense for processing unclassified DOD research reports, and approximately \$85,000 from the National Science Foundation for specialized documentation projects. The predominant functions of the Clearinghouse are the systematic collection, organization, and dissemination of federally supported research reports, and the translation of foreign research and technical journals. Their experience and capability in document storage and retrieval will be of great value in carrying out H.R. 3420, but the Clearinghouse will not be responsible, nor can it be, for the development and execution of the total program envisaged by the act.

The detailed information you requested as to titles, grades, and salaries of the added positions is attached. As in any new program requiring a high level of professional competence, we expect delays in filling many of the positions shown. Therefore, the staffing level indicated would probably not be reached until the program had been in operation for about a year. The grades shown reflect our best estimate at this time, and may vary somewhat, depending upon the duties and qualifications of employees actually selected. Position titles indicate duties required during the setup phases of the program; however, we will stress flexibility and cross-assignments to make maximum use of the small but highly competent staff we expect to recruit.

I appreciate the interest your committee has shown in this act, and hope we have provided satisfactory answers to your questions.

Sincerely yours,

JOHN T. CONNOR,
Secretary of Commerce.

OFFICE OF STATE TECHNICAL SERVICES

Proposed staffing to be built up during 1st year

Title and grade	Number	Annual salary
Director, GS-18.....	1	\$24,500
Deputy Director, GS-17.....	1	21,445
Senior program manager, GS-16.....	3	18,935
Engineering and program analysts, GS-15.....	6	16,460
Engineering and program analysts, GS-14.....	6	14,170
Legal adviser, GS-15.....	1	16,460
Administrative officer, GS-13.....	1	12,075
Statistical assistant, GS-11.....	1	8,650
Secretary, GS-9.....	1	7,220
Secretary GS-7.....	3	6,050
Clerk-stenographer or clerk, GS-5.....	4	5,000
Clerk-stenographer or clerk, GS-4.....	4	4,480
Total.....	32	

¹ Each.

THE CHAIRMAN OF THE COUNCIL OF ECONOMIC ADVISERS,
Washington, June 7, 1965.

Representative TORBERT MACDONALD,
Chairman, Subcommittee on Commerce and Finance, Committee on Interstate and Foreign Commerce, U.S. House of Representatives, Washington, D.C.
(Attention: Mr. Williamson).

DEAR MR. MACDONALD: I wish to offer this letter in support of H.R. 3420, the proposed State Technical Services Act, and to have this letter placed in testimony.

Technical change has contributed more than any other factor to our longrun economic growth. In its 1964 annual report, the Council of Economic Advisers stated "The crucial element in the rise of our material well-being has been the progressive utilization of our ever-growing store of knowledge of the world in which we live." Since the turn of the century, the Nation's real GNP has grown at an average rate of 3½ percent a year—an eightfold increase within a single lifetime. It is difficult to estimate precisely how much of this growth has resulted from technical improvements and how much has resulted from increases in the

available inputs of capital and labor. However, private estimates have attributed to technical progress as much as one-half of the growth of real GNP or seven-eighths of the growth in real output per man-hour.

Although it is by far the best single measure of longrun growth, real GNP understates true longrun growth in two important respects. First, it takes incomplete account of the value of the many new and improved products that have become available over the years. Second, it does not value the increased leisure which technology has made possible at the same time we have been increasing our production of goods and services. Analysis of real GNP therefore understates somewhat the true longrun importance of technical change.

In the coming years, the Nation will be increasingly dependent on the rapid growth and spread of new technology to maintain a high and sustained rate of economic growth. Since 1957, the economy has operated with substantial slack. Since 1961, primary attention has rightly been directed to fiscal and monetary measures that help to create employment opportunities for idle workers and productive facilities. We have still not achieved our full employment goals and we must not relax our efforts to do so. However, as the gap between potential and actual output is gradually narrowed, greater attention must be paid to measures that will increase productivity, and raise the growth of the potential. Such measures can permit us to extend our 4-year record of rapid and sustained expansion. At the same time, they will help to prevent the buildup of inflationary pressures and they will gradually improve our balance of payments. By speeding the application of new technology throughout the country, the State Technical Services Act should be a major step in this direction.

It is now fully recognized that governments have major responsibilities in promoting the growth and spread of new technology. The Federal Government finances two-thirds of the Nation's vast research and development effort. Governments at all levels make substantial contributions to the financing of our educational system. The State Technical Services Act will provide a unique cooperative State-Federal program, designed to make modern technology available wherever it can be profitably employed. Studies have shown that innovations frequently take years or decades to spread throughout industry. As modern technology becomes more complex and specialized, it becomes more important to have improved channels for its dissemination to all potential users. The State Technical Services Act should provide an important new channel for the rapid spread of modern technology.

The Federal Government has major programs to help speed the development of depressed regions of the country. The availability of technical manpower and specialized technical services is an important factor in developing the potential of low-income areas. By increasing the availability of know-how in all regions of the country, the State Technical Services Act will be an important factor in spreading prosperity to all parts of the Nation. It is important that the act will provide programs that are tailored to local needs and opportunities. This will permit the programs to serve the goal of regional development much more effectively than would be possible by artificially spreading Government research and development contracts around the country. Most Government research and development contracts are intended to further specific national defense and other needs. They should, therefore, be placed where these national needs will be best served. Regional needs can be best met through the State Technical Services Act.

The State Technical Services Act clearly cannot solve all our problems of economic growth. But it can be an important instrument in furthering national and regional growth, price stability, and an improved balance of payments. I hope your committee can report favorably on the bill, and that Congress will speedily enact it into law.

Sincerely,

GARDNER ACKLEY.

UNIVERSITY OF ARKANSAS,
Fayetteville, May 31, 1965.

Mr. W. E. WILLIAMSON,
Clerk, Committee on Interstate and Foreign Commerce,
House of Representatives, Washington, D.C.

DEAR ED: Thank you for your letter of May 24 suggesting that I might like to comment for the record or appear in person as a witness during the committee hearings on H.R. 3420 (technical services). Previous commitments will not

allow me to testify. As you may know, in March of this year I wrote to Oren Harris, chairman of the committee, expressing our interest in and support of the program outlined in the act.

The National Association of State Universities and Land-Grant Colleges has taken the position that the interest of various Federal departments and agencies in extension programs within their particular fields of responsibility—including industrial extension—be recognized and supported either in general legislation or in separate legislation designed as a part of a comprehensive program. We see the Technical Services Act of 1965 as an important part of a comprehensive extension program.

Scientific research and development conducted or supported by Federal agencies are creating new technologies and improved engineering know-how more rapidly than present mechanisms for their general dissemination are making it available to American industry. We believe that the Technical Services Act will create an effective means for placing the findings of science and engineering usefully in the hands of American enterprise.

Developments in the field of agriculture provide ample evidence of the contribution which the Agricultural Extension Service has made in this important aspect of our national life. The means provided by the Technical Services Act for carrying out a comparable function in the industrial, business, and economic areas have great potential for making significant contribution to the economic development of Arkansas and the Nation.

The university has been active in industrial and economic development of Arkansas through programs carried on by the College of Engineering, the Engineering Experiment Station, the Graduate Institute of Technology, the College of Business Administration, the Bureau of Business and Economic Research and the industrial research and extension center. We would welcome the opportunity through cooperation with the Federal Government to expand and strengthen these activities which are so essential to the economic and industrial development of Arkansas.

I am pleased at this additional opportunity you have provided me to express myself concerning the State Technical Services Act. Perhaps this letter may be useful in the hearing before the committee.

Warm personal regards and every good wish.

Sincerely,

DAVID W. MULLINS, *President.*

CONSULTING ENGINEERS COUNCIL,
Washington, D.C., June 21, 1965.

CONGRESSMAN OREN HARRIS,
House of Representatives,
Washington, D.C.

DEAR CONGRESSMAN HARRIS: Consulting Engineers Council has reviewed S. 949 and H.R. 3420, the State Technical Services Act, and is pleased to present to you its testimony on the bill. We respectfully request that you note several suggested amendments at the end of the statement which we sincerely believe will improve the effectiveness of this bill. The following is the prepared statement:

S. 949 and H.R. 3420: To promote economic growth by supporting State and regional centers to place the findings of science usefully in the hands of American enterprise.

Consulting Engineers Council of the United States, represents 1,600 independent firms of consulting engineers in private practice throughout the country. As the national organization representing the private engineering practitioner, CEC supports efforts to speed the economic growth of the country through effective use of our technical and scientific knowledge. Initiative in encouraging and directing a greater distribution of technical knowledge to business and industry will contribute to the expansion of the economy and the growth of our private enterprise system.

This will enhance economic growth and private enterprise only to the extent that it does not at the same time compete with the private business community which it is trying to help. To this extent Consulting Engineers Council cautions against any provisions in this legislation which would result in the providing of technical services by public bodies or agencies or tax-exempt foundations when the same services are provided by taxpaying, private consulting engineering firms and research laboratories.

The providing of technical services to business, industry, and Government is an area in which the private engineering community has long been preeminent. The wide range of highly diversified and specialized professional engineering talent available in private engineering firms and laboratories has in large measure contributed to the Nation's technical achievements and fund of knowledge. Faced with the constant need of maintaining the utmost in efficiency, economy, and expertise, the engineer in private practice has taken an active lead in providing a wide range of specialized engineering services in industrial plant modernization, design of buildings, and the planning and design of public works projects and military installations.

No engineering problem—whether it is the design of a small piece of specialized equipment for automation or the economic feasibility study and planning of a multimillion-dollar hydroelectric powerplant—is outside the expertise of the modern engineer.

To assure that proper safeguards are present in this legislation to preclude Government-financed competition by public bodies with private engineering firms and individuals, CEC suggests the following amendments:

SECTION 5(e)

Change the present wording: "Determined that such technical services program does not provide a service performed as practicably by private technical services, professional consultants or private institutions;" to read:

"Determined that such technical services program does not provide a service that is now available or could be made available as practicably by private technical services, professional consultants or private institutions;"

SECTION 5(f)

Add the italic words to the present wording:

"Planned no services specially related to a particular firm or company *public work, or other capital project* except insofar as the services are of general concern to the *industry and commerce* of the community, State or region;"

The amendment to section 5(e) is suggested to provide for the occasion when a technical engineering service which is not now available is perfected to the point that it is offered as a service to the public. The present wording, it is felt, does not take into account the offering of future technical services.

The amendment to section 5(f) regarding "public work or other capital project" is offered so that the section will conform to other provisions in the bill limiting services to business and industries. The amendment suggesting the addition of the words "industry and commerce" is offered to remove any implication that specific technical services under this act would be provided directly to a community, municipality, State agency, or other public body. Such an interpretation would lead to a direct competition with private engineering firms which perform on a contract basis much of the engineering services for all branches of government at the Federal, State, county, and municipal levels.

In summary, Consulting Engineers Council and the American Council of Independent Laboratories, which represents private laboratories, respectfully recommend adoption of the clarifying amendments to help assure that the legislation achieves its intended purpose. CEC and ACIL believe that this bill, if enacted, will provide encouragement to a broader dissemination of technical knowledge now available in engineering and science.

We would be pleased to know of your views to these suggestions and to benefit by suggestions you may have. We would be most appreciative of any consideration you may give this statement. If CEC can be of any service, we would be most happy to cooperate in any way.

Sincerely yours,

LEONARD K. CRAWFORD, *President.*

MISSISSIPPI RESEARCH & DEVELOPMENT CENTER,
Jackson, Miss., June 17, 1965.

HON. OREN HARRIS,
Chairman, Committee on Interstate and Foreign Commerce, Rayburn House Office Building, Washington, D.C.

DEAR CONGRESSMAN HARRIS: On behalf of the Mississippi Research & Development Center, a State agency doing research dedicated to economic development, I wish to express support of H.R. 3420, the proposed State Technical

Services Act of 1965. The proposed legislation will be a vital step toward establishing the machinery which will enable us, as a country, and us, as a State, to come to grips with the tasks associated with the dissemination of technology and its utilization.

I speak in terms of a "task" because, in reality, it is just that. Today, the United States is making fantastic strides in science and technology, particularly in the research and development effort in space and the military. In doing so, we are also growing in competence and capability to solve problems. Yet, in countless instances, new developments and technological changes do not show up in, or fail to be transferred to, areas of civilian technology. We can draw a comparison, which may not be an infallible one, but which I believe is indicative. For a number of years now, dollars going into R. & D. have been increasing faster than the gross national product. I am convinced that this lack of keeping pace is, at least partially, due to lack of transfer of ideas from one field to another—from those generating and developing them to those who could use them.

The proposed State Technical Services Act would go a long way toward such a transfer as is referred to here. Such a technical services program might be thought of as an extension effort for science and technology and a parallel, although not altogether similar, to the agricultural extension effort. The act would provide for State and regional programs geared, or designed, to serve the various sections of the country (the program serving Maine would necessarily contain features unique for Maine but which, perhaps, would be totally unrealistic for Mississippi—because the industrial problems and opportunities are different).

Mississippi's industrial employment only recently exceeded agricultural employment. Although we would not and should not discount the contribution of agriculture to the Mississippi economy, we must think increasingly of ourselves as an industrial State producing goods and services. It would be our hope that, through such measures as the State Technical Services Act, we could improve the productivity by which goods and services are made available to our people.

I would appreciate your notifying the members of the committee of my support for H. R. 3420 and including this letter in the official record.

Sincerely,

ROBERT F. DYE,

Acting Director of the Center, and Secretary, Mississippi Research and Development Council.

THE THAYER SCHOOL OF ENGINEERING,
DARTMOUTH COLLEGE,
Hanover, N.H., June 8, 1965.

Hon. JAMES C. CLEVELAND,
House of Representatives, Washington, D.C.

DEAR MR. CLEVELAND: Thank you for your letter of May 14. It was a distinct pleasure meeting you and to observe your diligent approach to the problems at hand. I am very appreciative of what I saw.

It may be too late to respond to the suggestion that in a Technical Services Act, H. R. 3420, I have reservations about section 5(c) which begins at line 21 on page 6. I suspect that this is intended to prevent a professor from receiving compensation twice for the same service, and of course I heartily concur that this should be prevented. However, section 5(c) jeopardizes any professor who does legitimate consulting work on his own, as he is permitted to do by his university, if his institution is a designated or participating institution. It possibly could make it illegal for him to receive any funds for his consulting work even though that work is separate, independent, and ethically permitted on a consulting contract directly between the professor and an industrial enterprise. If this were narrowly interpreted, by the present wording no professor would be safe in undertaking a consulting contract if his institution belonged to this scheme. It also indicates that he must not maintain any private interest in conflict with his public responsibility. Public responsibility can again be narrowly interpreted if one wishes to hold that a professor should contribute all his efforts free of charge in spite of the fact that consulting work has traditionally been regarded as a commodity in the market.

Thank you again for your interest.

Sincerely yours,

GEORGE A. TAYLOR,
Professor of Engineering and Management.

STATEMENT OF THE NATIONAL ASSOCIATION OF MANUFACTURERS

The National Association of Manufacturers appreciates this opportunity to present its views with respect to the State Technical Services Act of 1965, H.R. 3420. The purpose of this bill is "to promote economic growth by supporting State and regional centers to place the findings of science usefully in the hands of American enterprise."

We agree with the framers of this proposed legislation that "wider diffusion and more effective application of science and technology in industry are essential to the growth of the economy." We do not agree, however, that the proposed legislation is the only or the best means of accomplishing that purpose.

Some supporters of the proposed legislation believe, according to testimony now in the record, that the primary intention of the bill is to provide a "technical information dissemination program." The U.S. Department of Commerce established recently a Clearinghouse for Federal Scientific and Technical Information to disseminate to scientists, engineers, librarians and management, through a monthly publication, new, unclassified Government technical information. It will contain an unduplicated index of the records of the Atomic Energy Commission, the National Aeronautics and Space Administration, and the Department of Defense.

In addition, there are more than 2,600 business and professional publications, serving every conceivable occupation, issued regularly in the United States. Their purpose is to inform those interested in the field of the latest technological developments through articles and advertisements.

Scientific and engineering information, it seems to us, is more widely available today than ever before. If additional dissemination of information was all that was deemed necessary, such a program could be more readily and economically established through State or regional offices of the U.S. Department of Commerce. These offices could gather the material and make it available to all.

The major thrust of the proposed legislation, however, is to make the available scientific and engineering information useful. To this purpose, seminars, workshops, training programs, extension courses, and demonstrations to make the "technical reports, abstracts, computer tapes, microfilm, reviews, and similar scientific and engineering information" more effective are proposed. This, in effect, calls for an education program.

In recognition of this, the bill provides dollar-for-dollar matching grants by the Department of Commerce to the States for the establishment of a technical services program in a university, preferably a State university, or land-grant college. We understand that the total cost of the program would be in the neighborhood of \$70 to \$80 million annually.

The Association of State Universities and Land-Grant Colleges in its support of the proposed act cited the need for large-scale research and development, and stated, "The university can perform for industry the same R. & D. function they have performed so effectively for agriculture."

Others testifying on behalf of universities referred to services that could be provided to business, such as, "research and assistance on technical problems," and "to conduct research and testing programs where necessary."

These institutions, in making the dissemination of the technical information useful to industry, recognize that research, development, and testing are necessary to convert our scientific advances to effective commercial application though these activities are not mentioned specifically under the broad programs to be established under section 2(a)(4) of the proposed bill. To the extent they would be allowed to perform such services with the assistance of Government funds they would be competing with private organizations offering similar services.

Section 5(e) of the bill is designed to prevent any of the broad programs stated in the bill from competing with private enterprise. It provides that the designated institution certify it has "determined that such technical services program

does not provide a service performed *as practicably* [emphasis added] by private technical services, professional consultants, or private institutions." The phrase, "as practicably" is subject to such broad interpretation that State administrators would have almost unlimited discretion. In fact, lower cost, brought about by the subsidization, would undoubtedly be sufficient justification for institution of the proposed programs. This alleged safeguard then provides little, if any, actual protection.

We understand that limited programs of the nature of those to be established by the proposed bill have been operated by some States for a number of years. In addition, numerous colleges and universities offer day and evening extension courses covering a broad range of technologies. Thus, with a high level of technological education available to the businessman if he so desires, the need for this legislation has not been sufficiently justified in our opinion.

We submit that it is not the lack of programs or dissemination of information that limits the growth potential of small business. It is a well documented fact that small business problems center around two factors—lack of management skills, and inadequate financing.

One of the stated underlying assumptions for the need of such a program was contained in the 1964 Economic Report of the President.

"The Federal Government provides major support for the research and development which underlies our striking technological advances. In the past, much of our research and development has been connected with national defense. Now, as military outlays level off, we face—

"* * * a challenge to apply the Nation's growing scientific and engineering resources to new socially profitable uses;

"* * * an opportunity to accelerate the technological progress of our civilian industries."

Approximately \$15 billion is spent annually by the Federal Government for research and development for national security and about \$5 billion is spent by industry for civilian or commercial purposes.

However, under Government research and development contracts the Government in most cases, owns the patents to new inventions which were derived from such expenditures and today the Government owns more patents than anyone else. From time to time the Senate has adopted amendments to bills—which provide Government funds for research and development—that require the Government to take title to all patents resulting therefrom, except under unusual circumstances. A bill, S. 1899, to this effect has been introduced in the Senate.

It is a rare instance, that an invention made in pursuit of national security requirements can be adapted for civilian or commercial use without the expenditure of considerable time and money for further research and development. However, if the Government owns the patent, there is little incentive to make these expenditures if the patent right to exclude others from using the invention is not exerciseable. The rights to Government-owned patents are available to all, but the incentive to risk funds to develop and market such inventions is lacking.

Should Government patent policy, now subject of hearings in the Senate, result in an act to vest the patent rights in most cases in private hands, rather than Government, large research efforts and funds would be employed to transfer the new scientific and engineering discoveries to useful civilian needs. This effort and expenditure would dwarf those contemplated in the proposed legislation.

Since dissemination of technical information is more widely available than ever before, and since no effective safeguard is provided in the bill to prevent subsidized competition to private industry, and since this bill misreads the primary needs of small business, and since "more effective application of science and technology in industry" can be accomplished readily by revision of Government patent policy—we believe the proposed State Technical Services Act of 1965 is an unnecessary Federal operation and should not be enacted.

STATE OF CONNECTICUT,
DEVELOPMENT COMMISSION,
Hartford, Conn., May 27, 1965.

Hon. OREN HARRIS,
*Chairman, Interstate and Foreign Commerce,
House Office Building,
Washington, D.C.*

DEAR CONGRESSMAN HARRIS: It has been brought to the attention of the Connecticut Development Commission that the State Technical Services Act is scheduled for hearings before the House Committee on Interstate and Foreign Commerce during June.

The purpose of this letter is to convey the support of the Connecticut Development Commission for this legislation. The commission believes that the State Technical Services Act will significantly advance Connecticut's economy and, more importantly, the economy of the Nation.

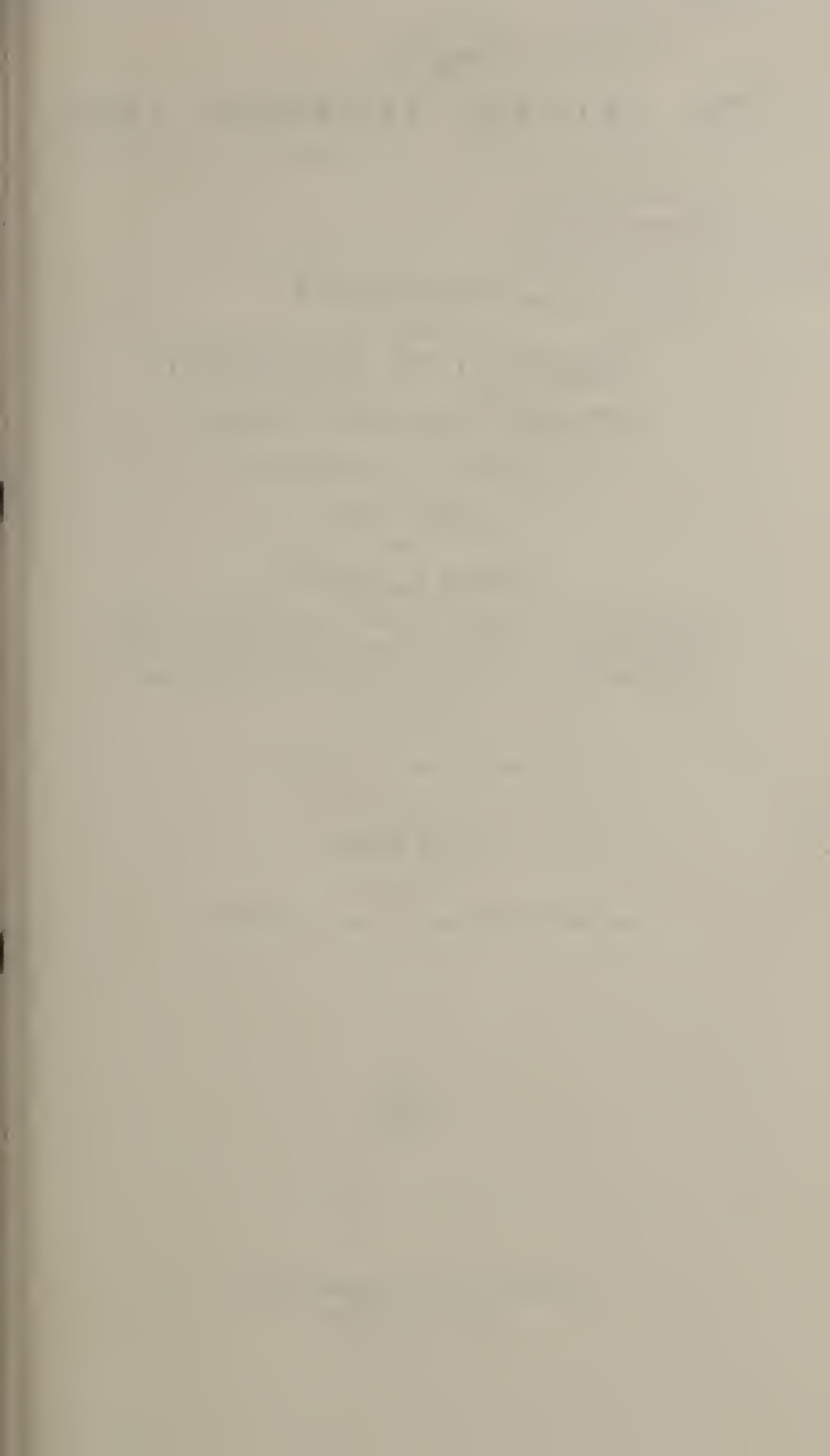
If the Connecticut Development Commission can be of any assistance in attaining the early enactment of this legislation, please do not hesitate to contact me.

Sincerely yours,

LEROY JONES, *Managing Director.*

(Whereupon the subcommittee adjourned at 12 o'clock noon.)

○



Digest 7/6/65

STATE TECHNICAL SERVICES ACT

PLEASE RETURN TO USDA
NATIONAL AGRICULTURAL LIBRARY
LAW BRANCH, LEGISLATIVE REPORTING
Rm. 117-E, Admin Bldg.
Wash. D. C. Ext. 4654

HEARINGS

BEFORE THE

COMMITTEE ON COMMERCE

UNITED STATES SENATE

EIGHTY-NINTH CONGRESS

FIRST SESSION

ON

S. 949 and S. 2083

BILLS TO PROMOTE ECONOMIC GROWTH BY SUPPORTING
STATE AND REGIONAL CENTERS TO PLACE THE FINDINGS
OF SCIENCE USEFULLY IN THE HANDS OF AMERICAN
ENTERPRISE

JUNE 8, 9, AND 10, 1965

Serial 89-16

Printed for the use of the Committee on Commerce



U.S. GOVERNMENT PRINTING OFFICE

WASHINGTON : 1965

COMMITTEE ON COMMERCE

WARREN G. MAGNUSON, Washington, *Chairman*

JOHN O. PASTORE, Rhode Island
A. S. MIKE MONRONEY, Oklahoma
FRANK J. LAUSCHE, Ohio
E. L. BARTLETT, Alaska
VANCE HARTKE, Indiana
GALE W. MCGEE, Wyoming
PHILIP A. HART, Michigan
HOWARD W. CANNON, Nevada
DANIEL B. BREWSTER, Maryland
MAURINE B. NEUBERGER, Oregon
ROSS BASS, Tennessee

NORRIS COTTON, New Hampshire
THRUSTON B. MORTON, Kentucky
HUGH SCOTT, Pennsylvania
WINSTON L. PROUTY, Vermont
JAMES B. PEARSON, Kansas
PETER H. DOMINICK, Colorado

GERALD GRINSTEIN, *Chief Counsel*
EDWARD JARRETT, *Chief Clerk*
JEREMIAH J. KENNEY, Jr., *Assistant Chief Counsel*
RALPH HORTON, *Assistant Chief Clerk*
MICHAEL PERTSCHUK, *Staff Counsel*

CONTENTS

	Page
Text of S. 949-----	2
Text of S. 2083-----	6
Agency comments:	
General Accounting Office-----	15
Office of Science and Technology, Executive Office of the President--	17
Statements of—	
Barthel, Dr. Chris E., Jr., executive director, Research Foundation of Kansas, Topeka, Kans-----	56
Chope, Henry R., executive vice president, Industrial Nucleonics Corp., Columbus, Ohio-----	108
Connor, Hon. John T., Secretary of Commerce-----	17
Hahn, Thomas Marshall, president, Virginia Polytechnic Institute, for the National Association of State Universities and Land-Grant Colleges, Washington, D.C-----	95
Hornig, Dr. Donald, Special Assistant to the President for Science and Technology, Executive Office of the President-----	39
Hubley, George W., director, State of Maryland Department of Economic Development, Annapolis, Md-----	83
Malone, Dr. Thomas F., vice president for research, Travelers In- surance Co., Hartford, Conn-----	78
Marlowe, Donald E., dean of engineering and architecture, Catholic University, for the National Society of Professional Engineers, Washington, D.C-----	104
Marra, Dr. George G., head, Wood Technology Division, Division of Industrial Research, Washington State University, Pullman, Wash--	47
Mather, Jean Paul, executive vice president, University City Science Center, Philadelphia, Pa-----	66
McGowan, John, director, library, Franklin Institute, Philadelphia, Pa-----	89
Reily, P. K., vice president, Atlantic Research Corp., Alexandria, Va--	43
Webber, Edwin, director of interstate relations, New England Council, Boston, Mass-----	114
Wegner, Waldo W., director, Center for Industrial Research and Services, Iowa State University, Ames, Iowa-----	69
Statements submitted—	
Bunting, J. Whitney, dean, College of Business Administration, the University of Georgia, Athens, Ga-----	116
Crawford, Leonard K., president, the Consulting Engineers Council, 1155 15th Street NW., Washington, D.C-----	122
Lewis, Fielding H., director, Industrial Development Division, West Virginia Department of Commerce, Charleston, W. Va-----	122
Long, Hon. Edward V., U.S. Senate-----	123
McGovern, Hon. George, U.S. Senate-----	126
Polanco-Abreu, Hon. Santiago, Resident Commissioner of Puerto Rico, U.S. House of Representatives-----	127
Prouty, Hon. Winston L., U.S. Senate-----	128
Scott, Hon. Hugh, U.S. Senate-----	37
Trussell, Douglas, for the National Association of Manufacturers-----	130
Walker, Eric A., president, the Pennsylvania State University, 201 Old Main Building, University Park, Pa., 16802-----	131

Letters, wires, etc.—

Ackley, Gardner, Chairman, Council of Economic Advisers, Washington, D.C.-----	Page 120
Bergin, Thomas P., dean, Center for Continuing Education, University of Notre Dame, Notre Dame, Ind.-----	120
Byrd, Hon. Robert C., U.S. Senate-----	121
Hickenlooper, Hon. Bourke B., U.S. Senate-----	119
Kerr, Clark, the University of California, Berkeley, Calif-----	118
Raley, Frank A., professor and chairman, Department of Industrial Engineering, North Dakota State University, Fargo, N. Dak-----	119
Rice, Theron, J., Legislative General Manager, Chamber of Commerce of the United States, 1615 H Street, N.W., Washington, D.C. 20006-----	132
Town, George R., dean, Iowa State University of Science and Technology, Ames, Iowa-----	119
Volpe, Gov. John A., Boston, Mass-----	118

STATE TECHNICAL SERVICES ACT

TUESDAY, JUNE 8, 1965

U.S. SENATE,
COMMITTEE ON COMMERCE,
Washington, D.C.

The committee met at 10 a.m., in room 5110, New Senate Office Building, Hon. Maurine B. Neuberger, presiding.

Senator NEUBERGER. The committee will come to order.

The Commerce Committee opens hearings this morning on S. 949, the proposed State Technical Services Act of 1965. This administration bill was sent to Congress by the Secretary of Commerce who preceded Mr. Connor, the former Secretary Luther Hodges. Secretary Hodges gave a strong recommendation and has received the equally enthusiastic support of Secretary Connor, who is going to testify before us in a moment.

The legislation was developed by the Commerce Department in response to President Johnson's search for ways to spur the development and dissemination of industrial technology. In January 1964, the President in his economic report, stated:

The Federal Government provides major support for the research and development which underlie our striking technological advances. In the past much of our research and development has been connected with the national defense. Now as military outlays level off, we face a challenge to apply the Nation's growing scientific and engineering resources to new socially profitable uses, an opportunity to accelerate the technological progress of our civilian industries. The Federal Government should join with private business and our universities in speeding the development and spread of new technology.

I have directed the Department of Commerce to explore new ways to accomplish this.

This bill, S. 949, would establish a Federal grant program in support of State programs to translate into effective commercial use the latest findings of science and technology.

Through the development of technical services programs planned and administered locally, designed to meet the needs of local communities and industries, these findings can be effectively and creatively placed in the hands of local business and enterprise. To qualify for Federal matching funds, the States would designate a State institution or agency to plan and administer its technical services programs. Where two or more States choose to join in a cooperative regional program, an institution could be jointly designated to plan and administer a regional program. Both State and regional programs would be formulated or implemented through local or regional initiative or responsibility and all qualified institutions in the States could participate.

This imaginative and far-reaching program seeks to serve three objectives: to increase employment, we hope, through development of new products and processes and services; it would strengthen the Nation's economy by upgrading the industrial technology and expanding the Nation's industrial base; and I think it would enhance the competitive position of the U.S. products in world markets.

On June 3, Senator Scott introduced S. 2083, which differs in certain important respects from S. 949. Although many of the witnesses may not yet have had an opportunity to analyze the difference between these two bills, we urge each witness to supplement his statement with reference to such differences, so that the committee can be guided in developing appropriate forms of legislation.

I will place in the record at this time the text of S. 949, together with the letter of transmittal from Secretary Hodges, and the statement of purpose and need and the text of Senator Scott's bill (S. 2083) to be followed by the agency comments.

(Bills follow and committee insert:)

[S. 949, 89th Cong., 1st sess.]

A BILL To promote economic growth by supporting State and regional centers to place the findings of science usefully in the hands of American enterprise

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

DECLARATION OF PURPOSE

SECTION 1. That Congress finds that wider diffusion and more effective application of science and technology in industry are essential to the growth of the economy, to higher levels of employment, and to the competitive position of United States products in world markets. The Congress also finds that the benefits of federally financed research, as well as other research, must be placed more effectively in the hands of American business and enterprise. The Congress further finds that the several States through cooperation with universities, communities, and industries can contribute significantly to these purposes by providing technical services designed to encourage a more effective application of science and technology to both new and established industries. The Congress, therefore, declares that the purpose of this Act is to provide a national program of incentives and support for the several States individually and in cooperation with each other in their establishing and maintaining State and regional technical service programs designed to achieve these ends.

DEFINITIONS

SEC. 2. For the purposes of this Act—

(a) "Technical services" means activities or programs designed to enable businesses and industries to acquire and use scientific and engineering information more effectively through such means as—

(1) analyzing problems of regions and industries to determine new opportunities for applying technology;

(2) preparing and disseminating technical reports, abstracts, computer tapes, microfilm, reviews, and similar scientific or engineering information, including the establishment of State or regional technical information centers for this purpose;

(3) providing a reference service to identify sources of engineering and other scientific expertise; and

(4) sponsoring industrial workshops, seminars, training programs, extension courses, demonstrations, and field visits designed to encourage the more effective application of scientific and engineering information.

(b) "Designated institution" means the institution or agency in each participating State, which has been designated as administrator of the program for such State under section 3 of this Act.

(c) "Qualified institution" means (1) an institution of higher learning with a program leading to degrees in engineering or business administration which is accredited by a nationally recognized accrediting agency or association to be listed by the United States Commissioner of Education, or such an institution which is listed separately after evaluation by the United States Commissioner of Education, pursuant to this subsection; or (2) a State agency or a private, non-profit institution which meets criteria of competence established by the Secretary of Commerce and published in the Federal Register. For the purpose of this Act, the United States Commissioner of Education shall publish a list of nationally recognized accrediting agencies or associations which he determines to be reliable authority as to the quality of engineering or business education or training offered. When the Commissioner determines that there is no nationally recognized accrediting agency or association qualified to accredit such programs, he shall publish a list of institutions he finds qualified after prior evaluation by an advisory committee, composed of persons he determines to be specially qualified to evaluate the training provided under such programs.

(d) "Participating institution" means each qualified institution in a State, which participates in the administration or execution of the State technical services program as provided by this Act.

(e) "Secretary" means the Secretary of Commerce or the official to whom the Secretary has delegated all or part of the authority in this Act.

(f) "State" means one of the States of the United States, the District of Columbia, the Commonwealth of Puerto Rico, or the Virgin Islands.

PLANS AND PROGRAMS

SEC. 3. Any State which wishes to receive Federal payments under this Act in support of its existing or planned technical services program shall designate, under appropriate State laws and regulations, an institution or agency to administer and coordinate that program and to prepare and submit plans and programs to the Secretary of Commerce for approval under this Act. If the institution or agency designated by each State is not a State university or land-grant college entitled to benefits under the Act approved July 2, 1862, or the Act of August 30, 1890, and Acts amendatory and supplementary thereto (7 U.S.C. 301-329), the Governor or other competent State authority shall furnish the Secretary a written statement of his reasons for designating such other institution or agency.

SEC. 4. The designated institution shall prepare and submit to the Secretary in accordance with such regulations as he may publish—

(a) At the beginning of each five-year period, a five-year plan which may be revised annually and which shall: (1) outline the technological and economic conditions of the State, taking into account its region, its industry, and its industrial potential and identify the major regional and industrial problems; (2) problems and outline the means for measuring the impact of such assistance on the State or regional economy; and (3) explain the methods to be used in administering and coordinating the program.

(b) An annual technical services program which shall (1) identify specific methods, which may include contracts, for accomplishing particular goals and outline the likely impact of these methods in terms of the five-year plan; (2) contain a detailed budget, together with procedures for adequate fiscal control, fund accounting, and auditing to assure proper disbursement for funds paid to the State under this Act; and (3) indicate the specific responsibilities assigned to each participating institution in the State.

SEC. 5. The Secretary shall not accept a five-year plan for review and approval under this Act unless the Governor of the State or his designee determines and certifies that the plan is consistent with State policies and objectives; and the Secretary shall not accept an annual technical services program for review and approval under this Act unless the designated institution has, as certified thereto by the Governor or his designee—

(a) invited all qualified institutions in the State to submit proposals for providing technical services under the Act;

(b) coordinated its programs with other States and with other publicly supported activities within the State, as appropriate;

(c) established adequate rules to insure that no officer or employee of the State, the designated institution or any participating institution, shall receive compensation for technical services for which funds are provided under

this Act from sources other than his employer and shall not otherwise maintain any private interest in conflict with his public responsibility;

(d) determined that matching funds will be available from State or non-Federal sources;

(e) determined that such technical services program does not provide a service performed as practicably by private technical services, professional consultants, or private institutions;

(f) planned no services specially related to a particular firm or company except insofar as the services are of general concern to the community, State, or region;

(g) provided for making public all reports prepared in the course of furnishing technical services supported under this Act or for making them available at cost to any person on request.

APPROVAL BY SECRETARY OF COMMERCE

SEC. 6. The Secretary shall review each five-year plan and each annual program submitted by the designated institution under section 4, or by the regional or interstate institution under section 7, and shall approve only those which (1) bear the certification required by the Governor or his designee under section 5; (2) comply with regulations and meet criteria that the Secretary shall promulgate and publish in the Federal Register; and (3) otherwise accomplish the purpose of this Act.

REGIONAL OR INTERSTATE PROGRAMS

SEC. 7. Two or more States may cooperate in administering and coordinating their plans and programs supported under this Act, in which event all or part of the sums authorized and payable under section 11 to all of the cooperating States may be paid to the institutions or persons authorized to receive them under the terms of the agreement between the cooperating States. When the cooperative agreement designates a regional or interstate institution to act on behalf of all of the cooperating States, it shall submit to the Secretary for review and approval under section 6 a regional or interstate five-year plan and annual regional or interstate technical services program which, as nearly as practicable, shall meet the requirements of section 4 and section 5.

SEC. 8. Notwithstanding the provisions of section 11, the Secretary is authorized to increase by 10 per centum the amount which he approves for any regional or interstate technical services program submitted under section 7. Such additional amount may be paid without requiring matching funds from State or non-Federal sources.

SEC. 9. The consent of the Congress is given to any two or more States to enter into agreements or compacts, not in conflict with any law of the United States, for cooperative efforts and mutual assistance in establishing regional or interstate institutions under section 7 for accomplishing the purposes of this Act.

ADVISORY COUNCIL

SEC. 10. Each designated institution and each regional or interstate institution shall establish an advisory council for technical services, the members of which shall represent broad community interests and shall be qualified to evaluate programs submitted under section 4. The advisory council shall review each annual program, evaluate its relation to the purposes of this Act, and report its findings to the designated institution and the Governor or his designee. Each report of the advisory council shall be available to the Secretary on request.

ADMINISTRATION AND PAYMENTS

SEC. 11. There is authorized to be appropriated such amounts as may be needed to carry out the purposes set forth in this section.

(a) From these amounts, the Secretary is authorized to make an annual payment to each designated institution, regional or interstate institution, or person authorized to receive payments in support of each approved technical services program. Maximum amounts which may be paid to the States under this subsection shall be fixed in accordance with regulations which the Secretary shall promulgate and publish in the Federal Register from time to time, considering (1) population according to the last decennial census; (2) industrial and economic development and productive efficiency; and (3) technical resources.

(b) The Secretary may reserve an amount equal to not more than 20 per centum of the total amount appropriated each year under this section and is authorized to make payments to any designated or participating institution for technical services programs which he determines have special merit or to any qualified institution for additional programs which he determines are necessary to accomplish the purposes of this Act, under criteria and regulations that he shall promulgate and publish in the Federal Register.

(c) An amount equal to not more than 5 per centum of the total amount appropriated each year under this section shall be available to the Secretary for the direct expenses of administering this Act.

(d) No amount paid under subsection (a) shall exceed one-half of the cost of the approved annual technical services program of the State, and for each dollar paid under subsections (a) and (b) there shall be available for expenditure on each approved program at least \$1 from State or non-Federal sources: *Provided*, That the Secretary may pay an amount not to exceed \$25,000 a year for each of the first three fiscal years to each designated institution to assist in the preparation of the first five-year plan and the initial annual technical services programs, without regard to any requirement of this section.

(e) At the end of each fiscal year, all remaining amounts which are appropriated for payments to the States under subsection (a) and which have not been obligated for payments to the States at that time, shall be available to the Secretary for payments under subsection (b), until expended.

SEC. 12. The Secretary is authorized and directed to aid the States and regions in carrying out their technical services programs by providing reference services which a State or region may use to obtain scientific, technical, and engineering information from sources outside the State or region, for the purposes of this Act. There is authorized to be appropriated each fiscal year such amount as may be necessary to provide the services authorized in this section.

SEC. 13. The Secretary is authorized to establish such policies, standards, criteria, and procedures and to prescribe such rules and regulations as he may deem necessary or appropriate for the administration of this Act.

LIMITATIONS

SEC. 14. (a) Nothing contained in this Act shall be construed as authorizing a department, agency, officer, or employee of the United States to exercise any direction, supervision, or control over, or impose any requirements or conditions, with respect to the personnel, curriculum, methods of instructions, or administration of any educational institution.

(b) Nothing contained in this Act shall be deemed to affect the functions or responsibilities under law of any other department or agency of the United States.

EVALUATION

SEC. 15. Within five years from the date of the approval of this Act, and prior to the end of each five-year period thereafter, the Secretary shall appoint a public committee, none of the members of which shall have been directly concerned with the preparation of plans, administration of programs or participation in programs under this Act. The Committee shall evaluate the significance and impact of the program under this Act and make recommendations concerning the program. A report shall be transmitted to the Secretary within sixty days after the end of each five-year period.

ANNUAL REPORT

SEC. 16. Each designated institution or regional or interstate institution shall make an annual report to the Secretary on or before the first day of September of each year on the work accomplished under the technical services program and the status of current services, together with a detailed statement of the amounts received under any of the provisions of this Act during the preceding fiscal year, and of their disbursement.

TERMINATION

SEC. 17. Whenever the Secretary, after reasonable notice and opportunity for hearing to any institution receiving funds under this Act finds that—

(a) the institution is not complying substantially with the provisions of this Act, with the regulations promulgated by the Secretary or with the approved annual technical services program; or

(b) any funds paid to the institution under the provisions of this Act have been lost, misapplied, or otherwise diverted from the purposes for which they were paid or furnished—

the Secretary shall notify such institution that no further payments will be made under the provisions of this Act until he is satisfied that there is substantial compliance or the diversion has been corrected or, if compliance or correction is impossible, until such institution repays or arranges for the repayment of Federal funds which have been diverted or improperly expended.

SEC. 18. Upon notice by the Secretary to any institution that no further payments will be made pending substantial compliance correction or repayment under section 17, any funds which may have been paid to such institution under this Act and which are not expended by the institution on the date of such notice, shall be repaid to the Secretary and be deposited to the account of the appropriations from which they originally were paid.

SHORT TITLE

SEC. 19. This Act may be cited as the "State Technical Services Act of 1965".

[S. 2083, 89th Cong., 1st sess.]

A BILL To promote commerce and encourage economic growth by supporting State and regional centers to place the findings of science usefully in the hands of American enterprise

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

DECLARATION OF PURPOSE

SECTION 1. The Congress finds that wider diffusion and more effective application of science and technology in business, commerce, and industry are essential to the growth of the economy, to higher levels of employment, and to the improvement of the competitive position of United States products in world markets. The Congress also finds that the benefits of federally financed research, as well as other research, must be placed more effectively in the hands of American business, commerce, and industrial establishments. The Congress further finds that the several States through cooperation with universities, communities, and business, commerce, and industrial establishments can contribute significantly to these purposes by providing technical services designed to encourage a more effective application of science and technology to both new and established business, commerce, and industrial establishments. The Congress, therefore, declares that the purpose of this Act is to provide a national program of incentives and support for the several States individually and in cooperation with each other in their establishing and maintaining State and regional technical service programs designed to achieve these ends.

DEFINITIONS

SEC. 2. For the purposes of this Act—

(a) "Technical services" means activities or programs designed to enable business, commerce, and industrial establishments to acquire and use scientific and engineering information more effectively through such means as—

(1) analyzing problems to determine new opportunities for applying technology;

(2) preparing and disseminating technical reports, abstracts, computer tapes, microfilm, reviews, and similar scientific or engineering information, including the establishment of State or regional technical information centers for this purpose;

(3) providing a reference service to identify sources of engineering and other scientific expertise; and

(4) sponsoring workshops, seminars, training programs, extension courses, demonstrations, and field visits designed to encourage the more effective application of scientific, engineering, and other useful information.

(b) "Designated agency" means the agency or institution in each participating State, which has been designated as administrator of the program for such State under section 3 of this Act or the agency or institution designated as administrator of a regional or interstate program pursuant to section 7.

(c) "Qualified institution" means (1) an institution of higher learning with a program leading to degrees in engineering or business administration which is accredited by a nationally recognized accrediting agency or association to be listed by the United States Commissioner of Education, or such an institution which is listed separately after evaluation by the United States Commissioner of Education pursuant to this subsection; or (2) a State agency or a private, nonprofit institution which meets criteria of competence established for the purpose of this subsection by the Secretary of Commerce and published in the Federal Register. For the purpose of this subsection, the United States Commissioner of Education shall publish a list of nationally recognized accrediting agencies or associations which he determines to be reliable authority as to the quality of engineering or business education or training offered. When the Commissioner determines that there is no nationally recognized accrediting agency or association qualified to accredit such programs, he shall publish a list of institutions he finds qualified after prior evaluation by an advisory committee, composed of persons he determines to be specially qualified to evaluate the training provided under such programs.

(d) "Participating institution" means each qualified institution in a State, which participates in the administration or execution of the State technical services program as provided by this Act.

(e) "Secretary" means the Secretary of Commerce or the official to whom the Secretary has delegated all or part of the authority in this Act.

(f) "State" means one of the States of the United States, the District of Columbia, the Commonwealth of Puerto Rico, or the Virgin Islands.

PLANS AND PROGRAMS

SEC. 3. Any State which wishes to receive Federal payments under this Act in support of its existing or planned technical services program shall determine, under appropriate State laws and regulations, the designated agency for the purposes of this Act. If such designated agency is not a State agency or university or land-grant college entitled to benefits under the Act approved July 2, 1862, or the Act of August 30, 1890, and Acts amendatory and supplementary thereto (7 U.S.C. 301-329), the Governor or other competent State authority shall furnish the Secretary a written statement of his reasons for designating such other institution or agency.

SEC. 4. The designated agency shall prepare and submit to the Secretary in accordance with such regulations as he may publish—

(a) At the beginning of each five-year period, a five-year plan which may be revised annually and which shall—

(1) outline the technological and economic conditions of the State, taking into account its region, business, commerce, and its industry potential, and identify the major problems in such areas;

(2) identify the general approaches and methods to be used in the solution of these problems and outline the means for measuring the impact of such assistance on the State or regional economy; and

(3) explain the methods to be used in administering and coordinating the program.

(b) An annual technical services program which shall (1) identify specific methods, which may include contracts, for accomplishing particular goals, and outline the likely impact of these methods in terms of the five-year plan; (2) contain a detailed budget, together with procedures for adequate fiscal control, fund accounting, and auditing, to assure proper disbursement for funds paid to the State under this Act; and (3) indicate the specific responsibilities assigned to each participating institution in the State.

PLAN REQUIREMENTS

SEC. 5. The Secretary shall not accept a five-year plan for review and approval under this Act unless the Governor of the State or his designee determines and certifies that the plan is consistent with State policies and objectives; and the Secretary shall not accept an annual technical services program for review and approval under this Act unless the designated agency has, as certified thereto by the Governor or his designee—

(a) invited all qualified institutions in the State to submit proposals for providing technical services under the Act;

(b) coordinated its programs with other publicly supported activities within the State, and where appropriate with other States;

(c) established adequate rules to insure that no officer or employee of the State, the designated agency or any participating institution, shall receive compensation for technical services for which funds are provided under this Act from sources other than his employer and shall not otherwise maintain any private interest in conflict with his public responsibility;

(d) determine that matching funds will be available from State or other non-Federal sources;

(e) determined that such technical services program does not provide a service performed as practicably by private technical services, professional consultants, or private institutions.

(f) planned no services specially related to a particular firm or company except insofar as the services are of general concern to the community, State, or region;

(g) provided for making public all reports prepared in the course of furnishing technical services supported under this Act or for making them available at cost to any person on request.

APPROVAL BY SECRETARY OF COMMERCE

SEC. 6. The Secretary shall review each five-year plan and each annual program submitted by the designated agency under section 4 or section 7, and shall approve only those which (1) bear the certification required by the Governor or Governors or designees under section 5; (2) comply with regulations and meet criteria that the Secretary shall promulgate and publish in the Federal Register; and (3) otherwise accomplish the purposes of this Act.

REGIONAL OR INTERSTATE PROGRAMS

SEC. 7. Two or more States may cooperate in administering and coordinating their plans and programs supported under this Act, in which event all or part of the sums authorized and payable under section 11 to all of the cooperating States may be paid to the designated agency authorized to receive them under the terms of the agreement between the cooperating States. Such agency shall submit to the Secretary for review and approval under section 6 a regional or interstate five-year plan and annual regional or interstate technical services program which, as nearly as practicable, shall meet the requirements of section 4 and section 5 as applied to the region or interstate area.

ADDITIONAL AMOUNT FOR REGIONAL OR INTERSTATE PROGRAMS

SEC. 8. Notwithstanding the provisions of section 11, the Secretary is authorized to increase by 10 per centum the amount which he approves for any regional or interstate technical services program submitted under section 7. Such additional amount may be paid without requiring matching funds from State or other non-Federal sources.

CONSENT OF CONGRESS

SEC. 9. (a) The consent of the Congress is given to any two or more States to enter into agreements or compacts, not in conflict with any law of the United States, for cooperative efforts and mutual assistance in establishing regional or interstate programs under section 7 for accomplishing the purposes of this Act.

(b) The right to alter, amend, or repeal this section, or any consent granted pursuant to this section, is expressly reserved.

ADVISORY COUNCIL

SEC. 10. Each designated agency shall establish, or appoint an existing agency as, an advisory council for technical services, the members of which shall represent broad community interests and shall be qualified to evaluate programs submitted under section 4. The advisory council shall review each annual program, evaluate its relation to the purposes of this Act, and report its findings to the designated agency and the Governor or his designee. Each report of the advisory council shall be available to the Secretary on request.

AMOUNTS AUTHORIZED AND PAYMENTS

SEC. 11. (a) There is authorized to be appropriated for the purposes of this Act, \$5,000,000 for the fiscal year ending June 30, 1966; \$10,000,000 for the fiscal year ending June 30, 1967; \$20,000,000 for the fiscal year ending June 30, 1968; \$30,000,00 for the fiscal year ending June 30, 1969; \$40,000,000 for the fiscal year ending June 30, 1970; and for the fiscal years thereafter such amounts as the Congress may hereafter authorize by law.

(b) From amounts appropriated pursuant to subsection (a) for any fiscal year, the Secretary is authorized to make payments to designated agencies in support of approved technical services programs. The maximum amount which may be paid to any State under this subsection (including amounts paid on behalf of such State to any regional or interstate agency) shall be fixed in accordance with regulations which the Secretary shall promulgate and publish in the Federal Register from time to time, considering (1) population according to the last decennial census; (2) business, commerce, industrial, and other economic development and productive efficiency; and (3) technical resources.

(c) The Secretary may reserve an amount equal to not more than 20 per centum of the total amount appropriated each year under this section and is authorized to make payments to any designated agency for a technical services program or part thereof which he determines has special merit or to any qualified institution for additional programs which he determines are necessary to accomplish the purposes of this Act, under criteria and regulations that he shall promulgate and publish in the Federal Register.

(d) An amount equal to not more than 5 per centum of the total amount appropriated each year under this section shall be available to the Secretary for the direct expenses of administering this Act.

(e) No amount paid under subsection (a) shall exceed one-half of the cost of the approved annual technical services program of the State, and for each dollar paid under subsections (b) and (c) there shall be available for expenditure on each approved program at least \$1 from State or other non-Federal sources: *Provided*, That the Secretary may pay an amount not to exceed \$25,000 a year for each of the first three fiscal years to each designated agency to assist in the preparation of the first five-year plan and the initial annual technical services programs, without regard to any requirement of this subsection.

(f) At the end of each fiscal year, all remaining amounts which are appropriated for payments to the States under subsection (b) and which have not been obligated for payments to the States at that time, shall be available to the Secretary for payments under subsection (c), until expended.

ASSISTANCE IN SERVICES

SEC. 12. The Secretary is authorized and directed to aid the designated agencies in carrying out their technical services programs by providing reference services to obtain scientific, technical, and engineering information from sources outside the State or region, for the purposes of this Act. There is authorized to be appropriated each fiscal year such amount as may be necessary to provide the services authorized in this section.

REGULATION AUTHORIZATION

SEC. 13. The Secretary is authorized to establish such policies, standards, criteria, and procedures and to prescribe such rules and regulations as he may deem necessary or appropriate for the administration of this Act.

LIMITATIONS

SEC. 14. (a) Nothing contained in this Act shall be construed as authorizing a department, agency, officer, or employee of the United States to exercise any direction, supervision, or control over, or impose any requirements or conditions with respect to the personnel, curriculum, methods of instruction, or administration of any educational institution.

(b) Nothing contained in this Act shall be deemed to affect the functions or responsibilities under law of any other department or agency of the United States.

EVALUATION

SEC. 15. Within five years from the date of the approval of this Act, and prior to the end of each five-year period thereafter, the Secretary shall appoint a public committee, none of the members of which shall have been directly concerned with the preparation of plans, administration of programs, or participation in programs under this Act. The committee shall evaluate the significance and impact of the program under this Act and make recommendations concerning the program. A report shall be transmitted to the Secretary within sixty days after the end of each five-year period.

ANNUAL REPORTS

SEC. 16. (a) Each designated agency shall make an annual report to the Secretary on or before the first day of September of each year on the work accomplished under the technical services program and the status of current services, together with a detailed statement of the amounts received under any of the provisions of this Act during the preceding fiscal year, and of their disbursement.

(b) The Secretary shall make a complete report with respect to the administration of this Act to the President and the Congress not later than January 31 following the end of each fiscal year for which amounts are appropriated pursuant to this Act.

TERMINATION OF PAYMENTS

SEC. 17. Whenever the Secretary, after reasonable notice and opportunity for hearing to any agency or institution receiving funds under this Act, finds that—

(a) the agency or institution is not complying substantially with the provisions of this Act, with the regulations promulgated by the Secretary, or with the approved annual technical services program; or

(b) any funds paid to the agency or institution under the provisions of this Act have been lost, misapplied, or otherwise diverted from the purposes for which they were paid or furnished—
the Secretary shall notify such agency or institution that no further payments will be made under the provisions of this Act until he is satisfied that there is substantial compliance or the diversion has been corrected or, if compliance or correction is impossible, until such agency or institution repays or arranges for the repayment of Federal funds which have been diverted or improperly expended.

RETURN OF CERTAIN AMOUNTS

SEC. 18. Upon notice to any agency or institution that no further payments will be made pending substantial compliance, correction, or repayment under section 17, the Secretary may require that any funds which may have been paid to such agency or institution under this Act and which are not expended by the agency or institution on the date of such notice, shall be repaid to the Secretary. Any such amounts returned shall be deposited to the account of the appropriations from which they originally were paid.

SHORT TITLE

SEC. 19. This Act may be cited as the "State Technical Services Act of 1965".

PROPOSED STATE TECHNICAL SERVICES ACT OF 1965

Mr. MAGNUSON. Mr. President, at the request of the Secretary of Commerce, I send to the desk for appropriate reference the proposed State Technical Services Act of 1965, together with a letter of transmittal from Secretary Hodges and a statement of purpose and need.

Science and technology today have assumed an importance in our lives that was undreamed of in years past. They are vitally involved in assuring an adequate national defense. They are responsible for the present high levels of physical health enjoyed by so many of our citizens. They are at the heart of our efforts to explore and make use of outer space. They hold the key to unlimited sources of energy for the future. They have produced a miracle of abundance in American agriculture.

But there is one area in which science and technology are sometimes taken for granted, although it is a field that is as important as any of the others I have mentioned. I am referring to the dynamic growth of our industrial economy. A prosperous economy is absolutely dependent upon science and technology, and particularly upon our ability to apply the results of new knowledge to practical purposes. All of our efforts in space, in defense, in atomic energy, in public health, are ultimately based on the ability of the private sector of the economy to produce sufficient tax revenues to support these important national programs.

Fortunately, we have not neglected public support for science and technology. We are truly a scientific and technological giant among nations. The amount of new knowledge coming forth from our research and development laboratories accumulates at an ever-increasing rate. This new knowledge, however, does not automatically find its way into use everywhere it is needed, or everywhere it could be exploited.

Highly trained people are necessary to bridge the gap between what has been discovered in a laboratory and what can be used on a production line. Special mechanisms and institutions are needed to translate the results of science into the language of applied technology. The ability to do this must exist in all parts of the country if the results of science and technology are to bear productive fruit in all sections of the country.

To aid in stimulating and expanding the effectiveness of this vital process throughout the Nation, this new legislation has been proposed by the U.S. Department of Commerce, the Federal agency responsible for fostering the steady growth of the American economy.

The State Technical Services Act is designed to permit the Federal Government to joint with State governments, universities, and local communities in putting scientific and technical information, in a useful form, into the hands of private industry in all of the States. If successful, it would lead to increased employment through development of new business, improved processes and products, and new services that flow from the exploitation of technology. Finally, it would help make the products of American manufacturers more competitive in the rapidly expanding world markets.

These objectives would be accomplished by a program of technical services specifically designed to meet the needs of local business and industry. The technical services would be provided mainly through educational institutions with engineering or business administration programs.

In outlining his plans for the Great Society, President Johnson said that the solution to the problems facing the Nation rest neither on massive programs in Washington nor the strained resources of local authorities. What are necessary are new concepts of cooperation, a creative federalism between the National Capitol and the leaders in local communities.

The Commerce Committee will, of course, want to make certain that the proposed State Technical Services Act embodies the most effective design to achieve its goals. Nevertheless, those goals are fully consistent with the principles which underlie the Great Society and they merit the thoughtful consideration and earnest support of the Congress.

I ask that the text of the bill and the letter of transmittal and the statement of purpose and need may be printed at the close of my remarks.

The VICE PRESIDENT. The bill will be received and appropriately referred; and, without objection, the bill, letter of transmittal, and statement of purpose will be printed in the Record.

The bill (S. 949) to promote economic growth by supporting State and regional centers to place the findings of science usefully in the hands of American enterprise, introduced by Mr. Magnuson, by request, was received, read twice by its title, referred to the Committee on Commerce, and ordered to be printed in the Record, as follows:

"S. 949

"Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

"DECLARATION OF PURPOSE

"That Congress finds that wider diffusion and more effective application of science and technology in industry are essential to the growth of the economy, to higher levels of employment and to the competitive position of United States products in world markets. The Congress also finds that the benefits of federally

financed research, as well as other research, must be placed more effectively in the hands of American business and enterprise. The Congress further finds that the several States through cooperation with universities, communities and industries can contribute significantly to these purposes by providing technical services designed to encourage a more effective application of science and technology to both new and established industries. The Congress, therefore, declares that the purpose of this Act is to provide a national program of incentives and support for the several States individually and in cooperation with each other in their establishing and maintaining State and regional technical service programs designed to achieve these ends.

"DEFINITIONS

"SEC. 2. For the purposes of this Act—

"(a) 'Technical services' means activities or programs designed to enable businesses and industries to acquire and use scientific and engineering information more effectively through such means as:

"(1) Analyzing problems of regions and industries to determine new opportunities for applying technology.

"(2) Preparing and disseminating technical reports, abstracts, computer tapes, microfilm, reviews, and similar scientific or engineering information, including the establishment of State or regional technical information centers for this purpose.

"(3) Providing a reference service to identify sources of engineering and other scientific expertise.

"(4) Sponsoring industrial workshops, seminars, training programs, extension courses, demonstrations, and field visits designed to encourage the more effective application of scientific and engineering information.

"(b) 'Designated institution' means the institution or agency in each participating State, which has been designated as administrator of the program for such State under section 3 of this Act.

"(c) 'Qualified institution' means (1) an institution of higher learning with a program leading to degrees in engineering or business administration which is accredited by a nationally recognized accrediting agency or association to be listed by the United States Commissioner of Education, or such an institution which is listed separately after evaluation by the United States Commissioner of Education pursuant to this subsection; or (2) a State agency or a private, nonprofit institution which meets criteria of competence established by the Secretary of Commerce and published in the Federal Register. For the purpose of this Act, the United States Commissioner of Education shall publish a list of nationally recognized accrediting agencies or associations which he determines to be reliable authority as to the quality of engineering or business education or training offered. When the Commissioner determines that there is no nationally recognized accrediting agency or association qualified to accredit such programs, he shall publish a list of institutions he finds qualified after prior evaluation by an advisory committee, composed of persons he determines to be specially qualified to evaluate the training provided under such programs.

"(d) 'Participating institution' means each qualified institution in a State, which participates in the administration or execution of the State technical services program as provided by this Act.

"(e) 'Secretary' means the Secretary of Commerce or the official to whom the Secretary has delegated all or part of the authority in this Act.

"(f) 'State' means one of the States of the United States, the District of Columbia, the Commonwealth of Puerto Rico, or the Virgin Islands.

"PLANS AND PROGRAMS

"SEC. 3. Any State which wishes to receive Federal payments under this Act in support of its existing or planned technical services program shall designate, under appropriate State laws and regulations, an institution or agency to administer and coordinate that program and to prepare and submit plans and programs to the Secretary of Commerce for approval under this Act. If the institution or agency designated by each State is not a State university or land grant college entitled to benefits under the Act approved July 2, 1862, or the Act of August 30, 1890, and acts amendatory and supplementary thereto (7 U.S.C. 301-329), the governor or other competent State authority shall furnish the Secretary a written statement of his reasons for designating such other institution or agency.

"SEC. 4. The designated institution shall prepare and submit to the Secretary in accordance with such regulations as he may publish—

"(a) At the beginning of each five-year period, a five-year plan which may be revised annually and which shall: (1) outline the technological and economic conditions of the State taking into account its region, its industry and its industrial potential and identify the major regional and industrial problems; (2) identify the general approaches and methods to be used in the solution of these problems and outline the means for measuring the impact of such assistance on the State or regional economy; and (3) explain the methods to be used in administering and coordinating the program.

"(b) An annual technical services program which shall: (1) identify specific methods, which may include contracts, for accomplishing particular goals and outline the likely impact of these methods in terms of the five-year plan; (2) contain a detailed budget, together with procedures for adequate fiscal control, fund accounting, and auditing to assure proper disbursement for funds paid to the State under this Act; and (3) indicate the specific responsibilities assigned to each participating institution in the State.

"SEC. 5. The Secretary shall not accept a five-year plan for review and approval under this Act unless the governor of the State or his designee determines and certifies that the plan is consistent with State policies and objectives; and the Secretary shall not accept an annual technical services program for review and approval under this Act unless the designated institution has, as certified thereto by the governor or his designee:

"(a) Invited all qualified institutions in the State to submit proposals for providing technical services under the Act.

"(b) Coordinated its programs with other States and with other publicly supported activities within the State, as appropriate.

"(c) Established adequate rules to insure that no officer or employee of the State, the designated institution or any participating institution, shall receive compensation for technical services for which funds are provided under this Act from sources other than his employer and shall not otherwise maintain any private interest in conflict with his public responsibility.

"(d) Determined that matching funds will be available from State or non-Federal sources.

"(e) Determined that such technical services program does not provide a service performed as practicably by private technical services, professional consultants or private institutions.

"(f) Planned no services specially related to a particular firm or company except insofar as the services are of general concern to the community, State or region.

"(g) Provided for making public all reports prepared in the course of furnishing technical services supported under this Act or for making them available at cost to any person on request.

"APPROVAL BY SECRETARY OF COMMERCE

"SEC. 6. The Secretary shall review each five-year plan and each annual program submitted by the designated institution under Section 4, or by the regional or interstate institution under section 7, and shall approve only those which (1) bear the certification required by the governor or his designee under section 5; (2) comply with regulations and meet criteria that the Secretary shall promulgate and publish in the Federal Register; and (3) otherwise accomplish the purposes of this Act.

"REGIONAL OR INTERSTATE PROGRAMS

"SEC. 7. Two or more States may cooperate in administering and coordinating their plans and programs supported under this Act, in which event all or part of the sums authorized and payable under section 11 to all of the cooperating States may be paid to the institutions or persons authorized to receive them under the terms of the agreement between the cooperating States. When the cooperative agreement designates a regional or interstate institution to act on behalf of all of the cooperating States, it shall submit to the Secretary for review and approval under section 6 a regional or interstate five-year plan and annual regional or interstate technical services program which, as nearly as practicable, shall meet the requirements of section 4 and section 5.

"SEC. 8. Notwithstanding the provisions of section 11, the Secretary is authorized to increase by 10 per centum the amount which he approves for any regional or interstate technical services program submitted under section 7. Such additional amount may be paid without requiring matching funds from State or non-Federal sources.

"SEC. 9. The consent of the Congress is given to any two or more States to enter into agreements or compacts, not in conflict with any law of the United States, for cooperative efforts and mutual assistance in establishing regional or interstate institutions under section 7 for accomplishing the purposes of this Act.

"ADVISORY COUNCIL

"SEC. 10. Each designated institution and each regional or interstate institution shall establish an advisory council for technical services, the members of which shall represent broad community interests and shall be qualified to evaluate programs submitted under section 4. The advisory council shall review each annual program, evaluate its relation to the purposes of this Act, and report its findings to the designated institution and the governor or his designee. Each report of the advisory council shall be available to the Secretary on request.

"ADMINISTRATION AND PAYMENTS

"SEC. 11. There is authorized to be appropriated such amounts as may be needed to carry out the purposes set forth in this section.

"(a) From these amounts, the Secretary is authorized to make an annual payment to each designated institution, regional or interstate institution, or person authorized to receive payments in support of each approved technical services program. Maximum amounts which may be paid to the States under this subsection shall be fixed in accordance with regulations which the Secretary shall promulgate and publish in the Federal Register from time to time, considering (1) population according to the last decennial census; (2) industrial and economic development and productive efficiency; and (3) technical resources.

"(b) The Secretary may reserve an amount equal to not more than 20 percent of the total amount appropriated each year under this section and is authorized to make payments to any designated or participating institution for technical services programs which he determines have special merit or to any qualified institution for additional programs which he determines are necessary to accomplish the purposes of this Act, under criteria and regulations that he shall promulgate and publish in the Federal Register.

"(c) An amount equal to not more than 5 percent of the total amount appropriated each year under this section shall be available to the Secretary for the direct expenses of administering this Act.

"(d) No amount paid under subsection (a) shall exceed one-half of the cost of the approved annual technical services program of the State, and for each dollar paid under subsections (a) and (b) there shall be available for expenditure on each approved program at least one dollar from State or non-Federal sources: *Provided*, That the Secretary may pay an amount not to exceed \$25,000 a year for each of the first three fiscal years to each designated institution to assist in the preparation of the first five-year plan and the initial annual technical services programs, without regard to any requirement of this section.

"(e) At the end of each fiscal year, all remaining amounts which are appropriated for payments to the States under subsection (a) and which have not been obligated for payments to the States at that time, shall be available to the Secretary for payments under subsection (b), until expended.

"SEC. 12. The Secretary is authorized and directed to aid the States and regions in carrying out their technical services programs by providing reference services which a State or region may use to obtain scientific, technical and engineering information from sources outside the State or region, for the purposes of this Act. There is authorized to be appropriated each fiscal year such amount as may be necessary to provide the services authorized in this section.

"SEC. 13. The Secretary is authorized to establish such policies, standards, criteria and procedures and to prescribe such rules and regulations as he may deem necessary or appropriate for the administration of this Act.

"LIMITATIONS

"SEC. 14. (a) Nothing contained in this Act shall be construed as authorizing a department, agency, officer, or employee of the United States to exercise any direction, supervision, or control over, or impose any requirements or conditions with respect to the personnel, curriculum, methods of instructions, or administration of any educational institution.

"(b) Nothing contained in this Act shall be deemed to affect the functions or responsibilities under law of any other department or agency of the United States.

"EVALUATION

"SEC. 15. Within five years from the date of the approval of this Act, and prior to the end of each five-year period thereafter, the Secretary shall appoint a public committee, none of the members of which shall have been directly concerned with the preparation of plans, administration of programs or participation in programs under this Act. The committee shall evaluate the significance and impact of the program under this Act and make recommendations concerning the program. A report shall be transmitted to the Secretary within sixty days after the end of each five-year period.

"ANNUAL REPORT

"SEC. 16. Each designated institution or regional or interstate institution shall make an annual report to the Secretary on or before the first day of September of each year on the work accomplished under the technical services program and the status of current services, together with a detailed statement of the amounts received under any of the provisions of this Act during the preceding fiscal year, and of their disbursement.

"TERMINATION

"SEC. 17. Whenever the Secretary, after reasonable notice and opportunity for hearing to any institution receiving funds under this Act finds that—

"(a) The institution is not complying substantially with the provisions of this Act, with the regulations promulgated by the Secretary or with the approved annual technical services program; or

"(b) Any funds paid to the institution under the provisions of this Act have been lost, misapplied, or otherwise diverted from the purposes for which they were paid or furnished—

the Secretary shall notify such institution that no further payments will be made under the provisions of this Act until he is satisfied that there is substantial compliance or the diversion has been corrected or, if compliance or correction is impossible, until such institution repays or arranges for the repayment of Federal funds which have been diverted or improperly expended.

"SEC. 18. Upon notice by the Secretary to any institution that no further payments will be made pending substantial compliance correction or repayment under Section 17, any funds which may have been paid to such institution under this Act and which are not expended by the institution on the date of such notice, shall be repaid to the Secretary and be deposited to the account of the appropriations from which they originally were paid."

COMPTROLLER GENERAL OF THE UNITED STATES,

Washington, D.C., March 15, 1965.

Hon. WARREN G. MAGNUSON,
Chairman, Committee on Commerce, U.S. Senate.

DEAR MR. CHAIRMAN: By letter dated February 4, 1965, you requested our report on S. 949. The stated purpose of this measure is to promote economic growth by supporting State and regional centers to place the findings of science usefully in the hands of American enterprise.

While we have no special information that would assist the committee in its consideration of the merits of S. 949, we offer the following comments on certain aspects of the measure.

Inasmuch as the grants made to the institutions described in the bill would involve the expenditure of appropriated funds it is our understanding that

these expenditures would be subject to audit and review by this Office with such reports to the Congress as may be deemed necessary under the provisions of the Budget and Accounting Act, 1921 (31 U.S.C. 53), and the Accounting and Auditing Act of 1950 (31 U.S.C. 67). We note, however, that the bill would not expressly grant the Secretary of Commerce or the Comptroller General the right to examine pertinent books, records, and documents of the institutions and agencies receiving Federal grants under the provisions of the bill. We believe that access to such records is necessary for the adequate administration and audit of a grant program, and we therefore suggest that the bill be amended by including a section substantially as follows:

"Each recipient of a grant under this Act shall keep such records as the Secretary shall prescribe, including records which fully disclose the amount and the disposition of such grant, the total cost of the related approved program, the amount and nature of the cost of the program supplied by other sources, and such other records as will facilitate an effective audit.

"The Secretary and the Comptroller General of the United States, or any of their duly authorized representatives shall have access to any books, documents, papers, and records of the recipient that are pertinent to amounts paid under this Act."

Section 5(g) of S. 949 would require that all reports prepared in the course of furnishing technical services supported under the bill be made public or be made available at cost to any person on request. It is not clear whether, for the purposes of the bill, the cost of the reports is intended to include only the costs of printing and distribution or the full cost of preparing the reports, including research, administrative, and other costs.

Section 11(c) provides that up to 5 percent of the total amount appropriated each year shall be available for direct expenses of administration. We believe that funds for administrative expenses should be provided by the Congress each year in a specified amount on the basis of the proposed program for such fiscal year.

We have no further comments to make concerning S. 949.

Sincerely yours,

JOSEPH CAMPBELL,
Comptroller General of the United States.

EXECUTIVE OFFICE OF THE PRESIDENT,
OFFICE OF SCIENCE AND TECHNOLOGY,
Washington, March 24, 1965.

HON. WARREN G. MAGNUSON,
Chairman, Committee on Commerce, U.S. Senate.

DEAR SENATOR MAGNUSON: In reply to your letter of February 24, requesting comments on S. 949, a bill introduced by Senator Byrd and others to promote economic growth by supporting State and regional technological service centers, I would like to offer the following views.

This bill results from several years of study by agencies of the executive branch, supported by leading scientific and economic consultants from outside the Government, of the problems of stimulating and extending technological innovation in the civilian sector of the economy. It is a modest proposal—fully supported by this administration—that merits the support of the Congress.

To a limited degree, the bill is modeled after the agricultural extension programs that have successfully placed the fruits of agricultural research in the hands of the American farmer with enormous benefits to the Nation. But the measure will also break new ground as a partnership—between the Federal Government, the States, our universities, and industries—to make technological achievements more widely and more readily available to a broad range of industrial firms at a time when industrial products are becoming increasingly sophisticated, when international competition is stiffening, and when public demands for goods and services are constantly increasing.

By authorizing the establishment in every State of university-based centers capable of making available to industry a wide variety of useful technical services, the bill would contribute to two especially important and timely objectives:

First, both industry and the universities would benefit from the resulting interchange of ideas and information. There are throughout the country many enterprises that because of limited resources or physical isolation have failed to

become aware or take advantage of the rich store of relevant information and technique that fresh scientific discoveries are constantly increasing, often under Federal sponsorship. On the other hand, our university educational programs could also, to a limited extent, benefit from increased involvement in and commitment to the economic development of their environment. New England and California typify regions of the country where such industry-university interdependence has significantly paced both economic and intellectual progress.

A second merit of the bill is that it would contribute to carrying forward this progress in every State of the Nation. Recent studies in both the executive and legislative branches indicate the desirability of sound programs to stimulate technological development throughout the country. In many States, this program would generate the first organized approach along such lines. Significantly, the program would rest on State-based initiative and cooperative funding, within the context of planning on both a long-range and annual basis. Furthermore, the provision of incentives in section 7 for regional and interstate cooperation is especially sound and responsive to the regional nature of many of our economic needs and opportunities.

S. 949, I believe, would constitute a solid first step in an attempt to stimulate new technology and new job opportunities. Should you desire a further expression of my views on this bill, I would be glad to provide it.

Sincerely,

DONALD F. HORNING, *Director.*

**STATEMENT OF HON. JOHN T. CONNOR, SECRETARY OF COMMERCE;
ACCOMPANIED BY J. HERBERT HOLLOMON, OFFICE OF THE SECRETARY OF COMMERCE, ASSISTANT SECRETARY FOR SCIENCE AND TECHNOLOGY; AND ROBERT E. GILES, OFFICE OF THE SECRETARY OF COMMERCE, GENERAL COUNSEL, DEPARTMENT OF COMMERCE, WASHINGTON, D.C.**

Secretary CONNOR. Thank you very much.

I have with me Assistant Secretary Herbert Hollomon, Assistant Secretary for Science and Technology, and Mr. Robert Giles, General Counsel of the Department of Commerce.

Madam Chairman and members of the committee, I am pleased to have the opportunity to appear before this committee in support of S. 949, the proposed State Technical Services Act of 1965.

Under the proposed legislation, Federal grants to the States would be authorized in a cooperative program to spread the findings of science and technology throughout American business and industry. The objective is to speed the economic growth of the States and the Nation as a whole by more effective use of our technical and scientific knowledge.

The possession of knowledge by a few experts is not enough for economic growth. Knowledge must be communicated and placed in the hands of business firms throughout the country. If this is not done, the American economy cannot achieve its full potential from science and technology.

As you stated, Madam Chairman, President Johnson's Economic Report of 1964 said:

The Federal Government should join with private business and our universities in speeding the development and spread of new technology. I have directed the Department of Commerce to explore new ways to accomplish this.

This bill will accomplish what the President asked to be done. If enacted, it will help to increase the industrial strength of the entire country, including those areas which are now economically weak. It will stimulate an increase in technical manpower and employment op-

portunities. It will enhance our competitive position in world markets. It will stimulate creation of new businesses and industries.

The program would work in the following way: To qualify for Federal matching funds, a State would name an institution or agency to prepare and administer a technical services plan and program for that State. This institution would be known as the designated institution. It could be a State university or a State agency. Two or more States could join in a cooperative program and name a regional institution.

The designated institution would prepare a 5-year plan outlining the technological and economic prospects of the State, the major regional industrial problems faced and how a technical services program could help solve them. Twenty-five thousand dollars a year in Federal funds for the first 3 years, on a nonmatching basis, could be made available to the State to help prepare the first 5-year plan and the initial annual programs. The programs would be developed with the advice of advisory committees reflecting broad local or regional interests. All qualified institutions in the State would be invited to participate in the planning.

The bill defines "qualified institution" as institutions of higher learning which have accredited programs in engineering or business administration, and those which are competent nonprofit organizations and State agencies. These would all be invited to participate. The State's technical services program would outline a budget and assign responsibilities to each qualified institution which participates in the program.

The designated institution would then submit the 5-year plan and first annual program to the Secretary of Commerce through the Governor of the State. The Governor would certify the plan and program had been developed under procedures and guidelines set out in the bill, which would include proper coordination, adequate rules to avoid conflicts of interest, assurance of non-Federal matching funds, and care in avoiding special treatment to particular firms.

Federal funds would be used to support approved programs meeting the legal requirements and the purposes of the bill. The grants could be as much as one half of the amount of the State program, with the remainder coming from State or non-Federal sources. However, maximum amounts paid to the States would be fixed by regulations, taking into account population, industrial and economic development and productive efficiency and technical resources. This flexibility is necessary to respond to the particular needs of the State and to encourage imaginative and creative local programs. No State could receive more than its limit, but could get less depending on the merit of its proposals. Regional programs could be allotted an extra 10 percent of the amount approved for payment to the participating States.

Up to 20 percent of the Department's appropriation for this activity could be used to make direct payments on a matching basis for programs that have special merit or are truly national in scope.

A State's long-term plan could, of course, be revised periodically. The annual programs implement the long-term plan; but they must be submitted each year to qualify for annual funds. In administering the bill we would establish a small administrative unit responsible to the Assistant Secretary for Science and Technology. We would, of

course, consult with other Federal agencies and coordinate this work with them. After each 5-year period, a public committee would evaluate the impact of the legislation and make any recommendations necessary to improve it, or possibly to terminate it, if the States by that time are successful enough in stimulating resources to carry the program on their own.

To see what the bill would accomplish we might first look to the major regional and industrial imbalances that exist in our use of advanced technology. Some industries are unable to adapt to new technology. Some companies within prosperous industries do not take advantage of the latest technology available. Our large expenditures for national defense and space exploration, while justified for their direct ends, are limited in the extent to which they contribute to the productivity of the rest of our economy.

The regions of the country which are economically most successful and the companies and industries that have thrived did not generally achieve their healthy position by discovering new knowledge in a laboratory—they achieved it by putting new or advanced technology to work.

The proposed legislation would not support scientific research or industrial research, nor would it be concerned with developing proprietary products or processes. Its purpose is to promote wider use of the results of research. There is a wide variety of technical services (as defined in section 2 of the bill) that can be offered to serve this purpose. These would specifically be drawn up by the State or region to meet the needs of the region or of the industry within the State or region. We think better results will occur in the regions and industries through local initiative than by Federal direction.

For example, a principal industry of a State might benefit from demonstrations of the latest technology pertinent to the area, or from practical workshops or seminars designed to upgrade the training of businessmen and their key skilled technicians. Another program might stress a new advance in technology affecting a large number of businesses in the State. For instance, seminars and demonstrations on new metal welding techniques would be useful to such local business interests as automotive mechanics, wrought iron furniture manufacturers, household appliance manufacturers, and construction engineers.

Another service for stimulating more efficient use of technical data might be provided through a technical data and referral center. This center could make available technical reports, abstracts, bibliographies, computer tapes and other data of particular interest to business throughout the State. Technology can also help in business management, as well as in engineering and production. For example, a program to introduce managers to the uses of computers in planning better market surveys or for planning their supply distribution operations might be a very valuable service.

Let me turn now to the more general need for the legislation.

Regarding our balance of trade, it seems clear that with the highest paid labor force in the world, American products having a high labor content are increasingly at a competitive disadvantage. Imports are successfully competing in our domestic markets, even in high technological products such as machine tools, scientific instruments, office and

computing machines, motors and generators, railway equipment, and aircraft. European plants are frequently more productive than our own. One of the most effective steps we can take in the face of this situation is to stimulate innovation and technological improvements in our own manufacturing enterprises. Spreading technology through programs possible under the bill would thus help our position in world trade.

In the free enterprise system, we often assume that inefficient producers quickly lose their share of the market and go out of business. Many believe that new techniques which improve productivity move swiftly through an industry, almost automatically. We find, however, that this is not necessarily so. There is a tremendous spread in productivity between the most productive firms and the least productive firms in some industries we have studied. In the machine tool building industry, for example, the most recent data available indicates that 8 manufacturers out of 100 averaged \$18.90 in dollar value added to their product for each man-hour of labor. Twenty-eight of the 100 averaged less than \$5. This means that a few modern plants are highly productive but a large portion of establishments are using obsolete techniques which reduce their competitive position, particularly in world markets. The same pattern exists in other selected industries and we have reason to believe that it exists in nearly every other industry over 20 years old.

Technological improvement is a very complex process. It does not occur readily. It is made more difficult by the risks inherent in innovation. It is also costly, particularly since the cost of basic research and development is rising more rapidly than the price of manufactured goods. In a modern industrial nation such as ours, technical activity and economic well-being seem to go hand in hand. With the results of so much expensive research being inefficiently used throughout the country, it is easy to see why imbalances have developed and why there is now a national need for a program to spread the results of science and technology for all regions, industries and businesses.

We might ask why the proposed legislation seems to call on universities to perform this function of disseminating technology. We feel that teaching skill and knowledge about the results of research are both essential to effective technical services programs. Most often these skills are found at the universities throughout the country. Through engineering schools, the universities are major sources of scientific and technical knowledge. Many universities have demonstrated their ability to stimulate new technology in activities such as their agricultural extension programs. Certainly, the States which now have successful economic development programs regard university participation as highly desirable for success. But we do not take the position that universities are the only technical resource which could be used in State programs. Other institutions such as nonprofit, technically oriented institutions, foundations, as well as appropriate State agencies are all excellent resources for carrying out the programs.

In conclusion, Madam Chairman, the State Technical Services Act, if enacted, will permit some important steps to be taken to place the results of costly research and development into the hands of those who will benefit. It would significantly aid in spreading technology for the public good. In contributing to our economic growth, to an in-

crease in job opportunities, and to an improvement in our international competitive position, the programs under the legislation would be well worth their cost.

I strongly urge this committee to act favorably on this bill.

Now Madam Chairman, in response to your request, I would like to say a few words about Senator Scott's bill, along the same lines, if I may.

Senator NUEBERGER. All right.

Secretary CONNOR. If I may continue, I would like to comment briefly on S. 2083, a bill very similar to S. 949, which was introduced by Senator Scott, on June 3, 1965. The bills are nearly identical, although we find several differences which I shall mention, other than, of course, the minor wording differences.

First, in S. 2083 the term "designated agency" rather than "designated institution" as used in S. 949 is used. This is a clarification of terminology which we believe is an improvement. However, the wording of section 3 in S. 2083 should be made clear that the "designated agency" acts for the State in administering the program and should therefore be authorized under the State law to act for the State. That authority should not be implied in any way by this legislation. This was the intent of S. 949, and I believe it is desirable that we leave to the States the question of authority of an agency or institution to act on behalf of the State.

Second, S. 2083 provides specific limits on dollar amounts authorized for the first 5 years of the proposed program. The authorizations given for successive years are \$5, \$10, \$20, \$30, and \$40 million. And although S. 949 has no maximum amount specified, we believe that \$10, \$20, \$30, \$40 million and \$40 million—in other words, a total of \$140 million over the 5-year period—are better maximum estimates if they should be specified in this bill by the judgment of the committee.

Third, S. 2083 requires the Secretary of Commerce to make an annual report to the President and to the Congress, with respect to the administration of the act. While that provision is not in S. 949, we would have no objection to including it.

Finally, in section 2(a)(4) of S. 2083, the definition of technical services has been broadened. Seminars, extension courses, et cetera, could be used not only to encourage the more effective application of scientific and engineering information, but of "other useful information" as well. We prefer the language of S. 949. The additional words, if interpreted one way, could permit training programs in subjects other than those concerned, with technology and we think it is better to be limited to the technological objectives of the act.

Thank you very much.

Senator NUEBERGER. Fine.

Senator Scott?

Senator SCOTT. I want to say, Mr. Secretary, I am very appreciative of your giving such careful consideration to S. 2083 and I am glad you feel some of these suggestions could usefully be incorporated.

I don't think I have any questions, except to point out, as I do in my own testimony, that we do have organizations in Pennsylvania through whom these functions might be channeled. I am not sure whether any further statutory authority is necessary.

But there exists in Pennsylvania the Governor's council of business and industry, and a committee known as the Committee of 100,000, which has actually done a considerable amount of work under the honorary chairmanship of Gen. Richard K. Mellon, and the chairmanship of Mr. Frank McGee of the Aluminum Co. of America, and these are both organizations under the appointive power of the Governor, as well as the Governor's council on science and technology.

I discussed these bills last night with our Secretary of Commerce, and he advises me that the State administration favors the approach which I have suggested.

As you know, we would in effect, probably in fact in Pennsylvania, if we can under the bill as finally passed, designate the Secretary of Commerce who administers the agencies I mentioned. The Secretary, I assume, would work closely with the State universities in the program. We have close relationships between Pennsylvania State University, for example, and the State chamber of commerce.

Secretary CONNOR. Yes. As I think I indicated, S. 949 as it is presently drafted, and with the changes you recommended, would arrive at the same conclusion; namely, leaving to the appropriate State authority, which in most cases would be the Governor, the determination of just what agency should represent the State. Acting in accordance with the State laws, the Governor could designate the one that seemed to be most appropriate for the particular objectives.

Senator NEUBERGER. Mr. Secretary, I liked one line in your statement, which I identified as the theme, and that I hadn't thought of before in discussing this bill: where you mentioned the results of so much expensive research being inefficiently used throughout the country. I thought this was a good focal point for us to work from, because it is true that many of us have been thinking of the research without its practical application throughout much of our activity.

You have stated what the thrust of this bill is intended to be, which is to tie the fantastic advances in sciences and economic growth to development of private industry and business.

In my State of Oregon, I wanted to see how this would apply, and I thought of a number of examples which would have considerable aid to our State, in our mineral industry, and much of our lumber business. I will not take the time to comment on the them now, but I will put that in the record.

I wonder if you would like to describe what you believe the perimeters or frontiers of this legislation ought to be? Specifically, how may this technical service be provided to the State and local authorities?

I am thinking of the operations in which my community particularly has a direct stake, such as port and dock facilities. Is there any connection? There is community-owned power and water, traffic control, rapid transit, airports, recordkeeping. And the Congress, in the bill, finds that the benefits of federally financed research as well as other research must be placed more effectively in the hands of American business and enterprise.

It seems strange to me that we should make efforts to improve the efficiency and effectiveness of private business, with the use of public funds, without offering that same opportunity to airports, and dock commissions, and so on. You don't need to answer me in detail now,

but I would really like to have some of your staff work up a memo to me, if there is any way that this can be used in the area in which I just suggested.

Secretary CONNOR. Madam Chairman, we will be glad to do that. (The letters follow:)

OREGON STATE UNIVERSITY,
SCHOOL OF ENGINEERING,
Corvallis, Oreg., May 20, 1965.

Senator MAURINE B. NEUBERGER,
Senate Office Building,
Washington, D.C.

DEAR SENATOR NEUBERGER: Thank you very much for your letters of April 23 and May 3 to Dean Gleeson and me with reference to the Technical Services Act of 1965. So far as I know there will not be a representative of the university present to testify at the hearings of the proposed bill.

In your letter of April 23 you asked that we provide information concerning the way in which the Technical Services Act would be helpful in promoting industrial development and economic growth in Oregon. I can list several concrete examples where such activities in the past would have provided considerable impetus to industrial development and growth in the State. As we see it, the role of the agencies and universities participating under this bill would be in the areas of applied research to develop and help industry and to take existing technologies and apply them toward the development of the State's resources.

I list a number of examples wherein support through such a Technical Services Act would have been of considerable aid to the State:

1. *The mineral industry in Oregon.*—The State of Oregon has considerable mineral resources which have not been developed because of their rather marginal characteristics. Limited and sporadic studies have been made of these, but sufficient funds have never been available to carry out a thorough investigation into their possible development. Prof. R. E. Meredith, of our department of chemical engineering, with support from the State department of planning and development, conducted an investigation into the possibility of extracting copper and zinc from their ores by means of an electrochemical technique. The results of this study were most promising, but lack of financial support prevented continued investigation and development of the process to the point where it may have been commercially feasible. This is one example where aid under the Technical Services Act would be advantageous. There are many other examples that may be cited with respect to the mineral resources of Oregon.

2. *Production of naval stores from pine stumps.*—The pine stumps in eastern Oregon represent a large source of naval stores, and here again several attempts have been made to extract these. The process, however, needs considerable study and development, and lack of financial resources has prevented the ultimate commercial development of this important resource.

3. *The brines of southeast Oregon.*—The brines of southeastern Oregon in the area north and east of Lakeview contain a wide variety of salts, of which sodium carbonate is present to the largest extent. These brines represent a large and replenishable source of these salts, but since they are a rather complicated mixture a separation process has never been achieved which is commercially feasible. Financial support to carry on a study of these brines, either with a view of separating the more valuable constituents commercially or of using them as a source of chemicals for other processes, would be an extremely worthwhile study. Development of these brines on a commercial basis would be of considerable economic importance to the Lakeview region.

4. *Attraction of outstanding scientists.*—Lack of financial resources has prevented Oregon State University from having on its campus two very outstanding, internationally known scientists.

Dr. William Kroll, who developed the process for extraction of zirconium and titanium, is an internationally known metallurgist. Had the financial resources been available just to provide Dr. Kroll with a laboratory he would have remained in Corvallis and continued his research on the Oregon State University campus. Results of this research could have had a far-reaching effect on the mineral and metallurgical industries in the State of Oregon. Dr. Kroll has now left the United States and carries on his research in Belgium.

Dr. James d'A. Clark is widely known for his contributions to the pulp and paper industry. He has a number of patents on the production of particle board and on equipment for testing the basic properties of pulp and paper. Had we been able to provide Dr. Clark with a laboratory and a small stipend he would have gladly remained on this campus to conduct his research and development in the pulp and paper industry. As you know, this is a most important industry in the State of Oregon and any developments that he would have accomplished would have been of direct benefit to the economy of the State.

Professor Burgess and I recently met with Mr. S. H. Mallicoat, director of the department of planning and development, and discussed, among other things, the various aspects of the Technical Services Act. Mr. Mallicoat indicated that he has forwarded to your office his expression of support for the bill. He is very interested in it and we foresee possibilities where the universities can work very closely with the department of planning and development in the implementation of the Technical Services Act in Oregon. The capabilities of those in business administration and in the law profession should also be particularly helpful in implementing the activities which the act will support.

I wish to reiterate again our objections to the wording of the bill in section 5, part C, beginning on line 21, page 6. This concerns the prevention of personnel participating in the program from performing any consulting work. As I pointed out in our previous letter, this makes the activity very unattractive to personnel in an engineering school who depend largely on private consulting work as a means of keeping up with the latest developments in industry, both in Oregon and throughout the United States. We would ask that every consideration be given to changing the wording of this section of the bill.

I appreciate your interest, and hope that the above information will prove useful to you.

Yours sincerely,

JAMES G. KNUDSEN.
Assistant Dean of Engineering.

THE SECRETARY OF COMMERCE,
Washington, D.C., June 17, 1965.

Hon. MAURINE NEUBERGER,
U.S. Senate,
Washington, D.C.

DEAR SENATOR NEUBERGER: During the hearings by the Senate Commerce Committee on the proposed State Technical Services Act you raised the question of whether the language of the bill would authorize providing technical services, as defined in section 2(a), to publicly owned facilities such as docks, airports, power and water systems, among others. It is our conclusion that the present language of the bill would authorize this.

We also feel, however, that such activities should not become dominant in the State program. The thrust of the State Technical Services Act is to stimulate the greater use of new technology by private business and industry. To the extent that this objective can be furthered by technological improvement in the operation of certain public facilities, activities to stimulate this improvement would, we believe, be acceptable.

Sincerely yours,

JOHN T. CONNOR.

But briefly, I would like to comment that the main thrust of the bill would be to enable each State, after the appropriate unit looks over the needs of the State, to develop a plan and then annual programs that fit the development of private industry within the States.

But there is nothing in the legislation that would prevent the State plan from including some key public activity such as the development of docks, which have an important relationship to industrial development in the State. But the main thrust is to enable the firms that have been backward in using technological advances and information to have the facility for acquiring and using that information so that their activities, and thus the whole State industrial activity, can go forward faster.

Senator NEUBERGER. Yes.

You just made a good point, that there is, of course, a close relation between docks and private business and airports and so on. I am naturally looking at it from a little different standpoint than Senator Scott, because I have a State that is not necessarily an industrial State, but we do have some other developments which we hope would help enlarge our trade.

I was thinking of another thing while you were testifying about the importance to international trade, and our commerce. Are we going to have to face going into the metric system to deal with commerce? I became interested in our labeling and packaging program and I thought it was brought out that many companies must have two kinds of labels for export, not only to meet ounces and liters and so on, but also because of different laws.

Aren't we going to have to come to the metric system eventually? This might be a study for this group.

Secretary CONNOR. Madam Chairman, this is under study. With Great Britain adopting a plan to go to the metric system, I think we cannot continue to be in splendid isolation. We will have to give very serious consideration to this. I wouldn't be surprised if there were some proposals before long.

Senator NEUBERGER. It might be an ancillary part of discussion of this legislation.

Senator LAUSCHE?

Senator LAUSCHE. I have a semblance of an idea of what the bill contains, but I would like to have my memory reclarified.

Number one, this bill contemplates putting the Federal Government in the same field of activity that now is occupied by what we call the Agriculture Extension Service. The Federal Government will provide money for the States to finance offices that will make available to industry and business know-how and research knowledge that will improve the ability of the businesses and industries to operate.

Is that in substance the objective of the bill?

Secretary CONNOR. Senator Lausche, that is a very good summary of the objective.

Senator LAUSCHE. While it may not parallel in all respects the agencies which are now in existence helping the farmer to acquaint himself with know-how on pesticides, improved pesticides, mixed breeding, to improve productivity, this will in substance parallel that program?

Secretary CONNOR. Yes. As you indicate, there may be variations from State to State, depending upon the particular needs of industry in each State. But nevertheless, that type of technological information would be made available in the same way as you have indicated it is already being done successfully in the agricultural field.

Senator LAUSCHE. That is, if you have business "A" in Ohio, that could be helped in its productivity through the acquisition of recently discovered knowledge of how to improve, this agency's objective would be to try to acquaint the local businessmen and industries with the latest development in the science?

Secretary CONNOR. Yes, Senator Lausche. That information would be available to that particular business firm and to its competitors that wanted to take advantage of the service.

Senator LAUSCHE. Yes.

Now, my questions will be directed in trying to ascertain what the organizational setup will be in administering this program. Will there be in your Department a separate division that will have charge of it?

Secretary CONNOR. Yes, there will be an administrative unit within the Department of Commerce, and our plan is that that unit would report to the Assistant Secretary of Commerce for Science and Technology.

Senator LAUSCHE. All right.

Now, you begin in your Department, through the division, and you move into the State. How would the State's organization be set up to provide this service?

Secretary CONNOR. In the usual case, the Governor of the State would designate an organization within that State that would have the responsibility for developing the plan in the first instance, and then administering the program once the plan is approved. The designated organization named by the Governor could be an agency of the State government, or it could be a State university, a land-grant college, or some other nonprofit organization appropriately authorized by State law, that had the competence, the experience and the skills to do this kind of work.

It would be up to each State to make that choice.

Senator LAUSCHE. I observed you answered that it might be an agency of the State, a university, or some other nonprofit organization that would be designated to administer the program.

Have you given any study to the disappointments that have already arisen in the administration of the Economic Opportunities Act, which has been given for administrative purposes to agencies that have no responsibilities to voters or to the Government or to anybody else?

Secretary CONNOR. Yes, sir; we are aware of that situation. We would certainly hope that the States would designate agencies that have had experience in this type of activity. In any event, whatever organization is designated should be authorized under the State constitution and law to act for the State.

Senator LAUSCHE. Well, I think in Ohio they are talking of designating Ohio State University. But I would like to emphasize that in a short period of several months this idea of taking responsibility away from governmental units in administering taxpayer's money, as in the Economic Opportunities Act, and turning it over to private nonprofit agencies, has demonstrated an indefensible extravagance and irresponsibility, and I wish to guard against the recurrence of that in this program.

Now, how much money is involved in this whole bill?

Secretary CONNOR. Our estimate, Senator Lausche, is that expenditures in the first year would be about \$9 million. We think that in the second year, with more States having prepared plans so that they can participate, it will go to about \$20 million. In the third year to \$30 million, and then we would think it would level off at about \$40 million to \$50 million.

Senator CANNON. Would the Senator yield at that point?

Senator LAUSCHE. Yes.

Senator CANNON. Why haven't you spelled out in the bill what you propose to spend, either per year or some limitation, rather than just leaving it an open-end shotgun approach?

Secretary CONNOR. Senator Cannon, the theory in drafting the bill was that this is long-term legislation and that it will take 5 years for the first cycle to be completed. Therefore, we felt it was inadvisable to attempt to define just what the limits should be.

But if this is considered desirable by this committee, there certainly is no objection to having some appropriate limitations.

Senator CANNON. Well, I for one would certainly not go along on any proposal that didn't have some guidelines or some limitation, limiting provisions, rather than just an open-end authorization that has no ceiling on it whatsoever.

Senator SCOTT. Would the Senator yield on that point?

Senator CANNON. Well, Senator Lausche had the floor.

Senator LAUSCHE. Yes, I yield.

Senator SCOTT. If I may, just before the Senator from Nevada came in, the Secretary of Commerce discussed the two bills, 949 and the bill I introduced, S. 2083. My bill does set up the guidelines and the limitations very much along the lines the Secretary has testified to, as to amounts, and as I understood the Secretary, he indicated that might be a useful way to approach it.

Is that right?

Secretary CONNOR. Yes, sir. I did suggest different amounts.

Senator SCOTT. Yes, but the guidelines and the closed end, rather than the open-end approach as contained in my bill, the Secretary indicated no objection to that.

Senator LAUSCHE. Mr. Secretary, will you analyze the method in which the \$9 million of the first year will be expended? How much will each State be entitled to?

Secretary CONNOR. Yes. I think Secretary Hollomon might do that, because he has studied this whole program. He can give the stages at which we expect the various States to be prepared to enter the program.

Senator LAUSCHE. Has this been covered before?

Senator NEUBERGER. No; it has not.

Mr. HOLLOMON. Based upon the plans of the various States, as we are aware of them, it would be our guess that it would take something on the order of 5 years for all of the States to be prepared to enter the program fully. This is the best estimate we can make. This is particularly true since in some States, legislation is on a biannual basis and appropriations from the State Legislatures may be somewhat delayed.

Secondly, it is necessary the States make plans to enter the program. It is our guess that approximately 10 to 15 States might be prepared to enter the plan the first year, although not fully, going to something on the order of 20, 25, or 30 the second year and up to nearly the maximum, 40, by the third year. All of the States should have submitted plans by the fourth or fifth years.

Senator LAUSCHE. What is the formula of distribution?

Mr. HOLLOMON. The bill does not specify an exact formula for distribution, Senator.

Senator LAUSCHE. Would that mean it would be in the discretion of the administering officer to determine how much he will give to a State or not give to it?

Mr. HOLLOMON. The bill calls for the Secretary of Commerce to publish regulations with respect to the maximum that would be al-

lowed each State. That formula would depend upon the population, the technical activity in the State, and the relative economic development of the State. It would take into account those factors in determining the amount.

Senator LAUSCHE. Why don't you write the formula into the bill?

Mr. HOLLOMON. It was felt that as time went on, it might be desirable to make adjustments in the formula. It was thought it would be advisable to allow the Secretary, after some experience with the bill, to adjust the formula, limited by a total maximum authorization in the bill.

Senator LAUSCHE. Well, I can see where it would be pretty hard to write a formula, because of the difference in the activity of the different States in business and industry.

Secretary CONNOR. That is exactly the point, Senator. We think that this legislation should give the maximum flexibility to each State in working out its plan, tailor made to the needs of that State. Therefore, at the moment we are not in a position to say exactly how this is going to work out. We will have to get the range of the problems from the States.

In other words, we do not think that Federal direction and control on a highly centralized basis is desirable for this kind of activity. We think, on the contrary, that the maximum amount of flexibility should be placed at the State level.

Senator LAUSCHE. What is the status in the agricultural program? Does it have written into the law the formula, or is it done by regulation?

Secretary CONNOR. Mr. Giles?

Senator LAUSCHE. If you can't answer, you can supply it for the record.

Secretary CONNOR. We will supply that, Senator.
(The information follows:)

THE ASSISTANT SECRETARY OF COMMERCE,
Washington, D.C., June 17, 1965.

HON. MAURINE B. NEUBERGER,
U.S. Senate,
Washington, D.C.

DEAR SENATOR NEUBERGER: During the hearings of the Senate Commerce Committee on the proposed State Technical Services Act of 1965, Senator Lausche (pp. 28 and 37 of the report of proceedings, June 8, 1965) asked for information relating to the formula used in apportioning funds to the States under the agricultural extension program. I am happy to submit the following information for inclusion in the record:

The formula by which Federal funds are allocated to the States for agricultural extension is given in Public Law 87-749 (1962) amending the Smith-Lever Act of 1914. Of the funds available for distribution to the States under the formula, 20 percent is paid to the States in equal amounts, 40 percent is paid to the States in the proportion that the rural population of each State bears to the total rural population, and the remainder is paid to the States in proportion that the farm population of each State bears to the total farm population. The law specifies that the Federal funds allocated to each State under the formula be matched equally by the State.

From reviewing the transcript of the hearings, it appears that there was a lack of precision in the discussions concerning the various agencies and institutions that have a role to play in each State program. It is the intent of S. 949 that the "designated institution" be an agency or institution authorized under the laws of the State to carry out this responsibility. As such, it could be a State agency, State university, or a land-grant college. No other organization, public or private, profit or nonprofit, could be designated, unless it was specifically author-

ized under State law to act for the State. The "designated institution" should be that organization in the State best able to take responsibility for developing the State plan and administering its program. It need not be qualified itself to carry out part of a State's program, although a "qualified institution" (defined in sec. 2(c)) could also be the "designated institution" if the State wished.

The term "participating institution" refers to those "qualified institutions" in a State which are actually participating in the State program. Some "qualified institutions" may be unable or may not want to participate in the program.

I hope that these remarks will be helpful to the committee. I would be happy to be of further assistance to you in this matter.

Sincerely yours,

J. HERBERT HOLLOMON.

Senator LAUSCHE. Is there any matching requirement in the bill?

Secretary CONNOR. Yes; no more than 50 percent of the funds required by the plan for a State would be furnished by the Federal Government. The remaining amount would come from State sources. This provision is broad enough to enable not only the use of State government funds, but contributions from private organizations and educational institutions and others interested in the particular plan for that State.

Senator LAUSCHE. How did you arrive at the 50-percent participation figure?

Secretary CONNOR. Secretary Hollomon?

Mr. HOLLOMON. We clearly thought that a plan of this kind should be supported by initiative from the State and quite frankly, the 50-percent figure is arbitrary.

Senator LAUSCHE. Do you know whether there is a required participation of matching funds in the agricultural program?

Mr. HOLLOMON. Yes, sir; there is. I can't tell you the exact amount, but there is a requirement for matching funds in the agricultural program.

If my memory serves me properly, it is 50 percent. But I can furnish that for the record.

Secretary CONNOR. Mr. Giles can supplement that.

Mr. GILES. According to my information, in 1964, Senator, it was about 38-percent Federal, 39-percent State, and 23-percent local.

Senator LAUSCHE. In the agricultural?

Mr. GILES. In the agricultural extension.

Senator LAUSCHE. Thank you very much.

Senator NEUBERGER. Senator Scott.

Senator SCOTT. If I may, instead of reading testimony, Madam Chairman, I would like to state that I have a statement, and ask unanimous consent that it may appear at the conclusion of the testimony of the Secretary of Commerce.

Senator NEUBERGER. Without objection, it is so ordered.

Senator SCOTT. And secondly, to say a copy of the statement is before each of the Senators present. In my statement, I point out those differences between my bill, S. 2083, and the administration bill, S. 949, and the Secretary of Commerce has indicated that certain of these suggestions, in his judgment, are useful; that regarding certain others, he prefers the administration bill, and the record will show that.

I notice that in regard to the definition of technical services, the Secretary favors the administration bill, and I would be inclined to go along with that. He makes certain other specific suggestions, and I hope that the Secretary's suggestions as to changes in the bill, as ini-

tiated by my bill, be considered generally. There may be other improvements on both bills.

With that statement, I would like to be excused and would be available for questioning at some later date if any members want to question me.

Senator NEUBERGER. Thank you, Senator. This will be included and will be useful in considering the differences and comparisons between the two bills.

Senator SCOTT. I would like to add just one statement. Last night, I showed my statement to the Secretary of Commerce of Pennsylvania, Mr. John Tabor, and he said, in his judgment, that represented the State position, as well.

Senator NEUBERGER. We are glad to have that. Senator Brewster?

Senator BREWSTER. Thank you, Madam Chairman. Mr. Secretary, let me say first that, as always, your remarks are both interesting and illuminating.

Secretary CONNOR. Thank you, sir.

Senator BREWSTER. I marvel at the vast store of knowledge you have gathered in a very short time in your present post. I congratulate you.

Secretary CONNOR. Senator, this gives me a good opportunity to compliment the people in the Department of Commerce with whom I work. It is a highly competent group of people.

Senator BREWSTER. May I ask you a few questions on a variety of subjects? First of all, for the administration of the program, the staffing of the State offices, is it my understanding that in each case it would be some State agency, or some agency established by the State, or with the State's approval, and no new overall Federal bureaucracy would be created?

Secretary CONNOR. That is correct, Senator Brewster. The State would designate the authorized agency for this purpose. We think that, in the usual case, it might select the State university, or a land-grant college, or an agency of the State government that has a background in this economic development field or, if authorized by State law, could designate some other organization. But this would not require any new kind of nationwide Federal office system.

Senator BREWSTER. Now, on another subject, Mr. Secretary, we mentioned a formula earlier and Secretary Hollomon suggested the reason for not including it in the bill.

Is some formula now in existence that might be included in the record for our guidance as to your thinking?

Secretary CONNOR. No, sir; there is no fixed formula at the present time. It is in the process of development. We are discussing it with the officials in the Bureau of the Budget and using the experience of others. But we do not have it finalized at the moment.

Senator BREWSTER. When you do arrive at the formula, I believe the members of this committee would be interested in seeing what the formula is, so they would know what their States might receive under the program.

Secretary CONNOR. We certainly will furnish that as soon as we have it.

Senator BREWSTER. Two more questions: Would this activity be entirely covered by the Civil Rights Act of a year or so ago?

Secretary CONNOR. Yes, sir.

Senator BREWSTER. So there would be no contribution where there was some form of segregation and discrimination?

Secretary CONNOR. That is my understanding. Mr. Giles, would you comment on that, specifically?

Mr. GILES. Yes, sir; that is our understanding. This would be a Federal aid program subject to the Civil Rights Act on the same basis as others.

Senator BREWSTER. A last question: There has been some controversy over patents here on Capitol Hill, and, parenthetically, let me say Maryland has peculiar interests in patents for other reasons. I notice on page 5 of your statement, you say "nor would it be concerned with developing proprietary products, or processes." Would you comment on the situation of patents?

Would you expect any to be developed, and if issued, where Federal funds had, in part, been responsible for their development, would they be in public or private ownership?

Secretary CONNOR. Senator Brewster, our evaluation is that there will be no patent problems arising under this legislation of the type you mention because there will be no support for research and development activities.

The research and development that would be involved here would all be done with private resources, or under other Federal programs and published. The object of this legislation is to disseminate the technical and scientific information that is available from other sources within a State so it can be used for the development of industries within that State. It is highly unlikely and, in fact, impossible, in our opinion, for there to be patentable inventions or discoveries resulting from activities supported by this legislation.

Senator BREWSTER. Thank you, sir.

Senator NEUBERGER. Senator Cannon?

Senator CANNON. Thank you, Madam Chairman. Mr. Secretary, would you submit for the record a formula that would be acceptable to you, if the committee saw fit to write it into law, one that you would propose? Also, would you submit for the record a limit of expenditures, per year, for the period of 5 years?

Secretary CONNOR. Yes, sir.

Senator CANNON. Which would be acceptable to you should the committee see fit to write that into the bill?

Secretary CONNOR. Senator Cannon, we have suggested there be, for the 5-year period, a limitation of \$140 million. If you want us to break it down—

Senator CANNON. Break it down on a yearly basis, and also a formula.

Secretary CONNOR. We will do that. As far as the formula itself, Senator Cannon, so there will be no misunderstanding, just what type of formula do you have in mind? Is it the maximum amount for each State?

Senator CANNON. Give us some method of determining the amount that each State could acquire. In other words, we want to insure that there would not be an undue amount obtainable by one State to the detriment of some other State, a fixed guideline that could be put in the bill.

We have a number of formulas in other programs that spell out how the funds can be obtained, and I have no particular formula in mind, but I would like you to submit one that would be acceptable to you.

You would have to devise one for your own use, anyway, in allocating these funds, to get the authorization. So I am just saying do it now, and submit one to us that would be acceptable to you in the event we decide to write it into the bill.

Secretary CONNOR. We will be glad to give that further consideration.

Senator LAUSCHE. Do you know whether in the Agricultural Extension Act formula there is an extraordinary weight given to the quantity of farm industry that is within a State? I advance that because this is business and industry you are dealing with.

The Agricultural Act is the farmer's business. Now, naturally, an industrial State would undoubtedly need more than a purely agricultural State. So my question is: Is there in the agricultural extension formula a special weight given to the quantum of farming that is done in a particular State?

Mr. HOLLOMAN. Subject to correction, I believe that the agricultural formula is equally based upon population and the number of farms.

Senator LAUSCHE. The number of farms?

Mr. HOLLOMAN. Yes, sir; I believe that is the case.

Senator LAUSCHE. Supply that for the record, too, will you please?

Mr. HOLLOMAN. Yes, sir.

(The information follows:)

THE SECRETARY OF COMMERCE.
Washington, D.C., June 17, 1965.

HON. MAURINE B. NEUBERGER,
U.S. Senate,
Washington, D.C.

DEAR SENATOR NEUBERGER: At the recent hearings on the State Technical Services Act, Senator Cannon requested more information concerning our present thinking on the formula which would set the maximum authorization for each State.

Under the proposed bill, we would take into account the factors of population, industrial and economic development and productive efficiency, and technical resources. Our present thinking is that the authorization to the States will be in the range of \$150,000 for the least populous to not more than \$2 million for the most populous States. However, before deciding on the exact details of an authorization formula, we would want to publish it in proposed form and get the comments of State Governors and other officials before reaching final conclusions.

We do not believe it would be desirable to write into the statute itself a precise formula which the Department would have to follow. Rather, we believe it would be better to set out in the statutes the factors or elements which we would have to take into account and leave this small degree of administrative flexibility to work out the precise formula.

The total authorization under the bill could be limited to 5 years and to an amount not to exceed \$140 million over that period. This limitation would provide to the Congress the degree of control which it might like to have.

Sincerely yours,

JOHN T. CONNOR.

Senator NEUBERGER. Would this bill compete with the professional consultants and do at Government expense what industry might otherwise hire a private consultant to do?

Secretary CONNOR. Madam Chairman, we do not think it will. We think that as each State develops its plan and starts putting its pro-

gram into operation, many of the participating firms will find it advisable to hire consultants to help them adapt this information to their own activities.

We think that this will generate more business for the consultants. We do not think there is any real problem of taking business away from them.

Senator NEUBERGER. Is there some kind of a possibility that this is meant to help small industry at the expense of large industry?

We laymen think of large industry as already knowing how to use technological developments and services. Do you see that it is an equalization thing; that it affects small industry at the expense of large industry because it would incite them to more initiative in this area?

Secretary CONNOR. Madam Chairman, our objective is to make this advance technical and scientific information available to all industry. It is certainly true that many large industries have research and development programs of their own which enable them to keep up. They are more alert to the possibilities and the opportunities that come from a flow of information that heretofore has not been available to them, so they may be able to take advantage of it more quickly.

On the other hand, in many industries, surprisingly enough, even large firms have had no appreciable research and development programs, and therefore they will be in a position to benefit from this particular program.

As you point out, small firms traditionally just have not had the financial resources to support research and development programs, and they are in the background area. Thus they need the help of this program, by and large, more than larger firms do. But they may have more difficulty in taking advantage of the opportunities. So as we see it, it is going to be rather uneven participation, and it will not depend so much on the size of the business organization as its adaptability to the changing situation and alertness and interest in these programs. This is going to vary from State to State.

Senator NEUBERGER. I suppose that it depends a lot on what the small business is.

Secretary CONNOR. Exactly.

Senator NEUBERGER. For instance, in my State, we have a small business called Tetronics, but it is in the business of supplying what has been needed so much, and I am sure they have used a great deal of this kind of information.

I haven't studied Senator Scott's bill, and I don't know too much about it, except as it was commented on here today. But I gather that the differences that this committee is going to have to examine and explore have much to do with who can really do this job.

Now, can the universities really do this job and do they have people who are knowledgeable about industry problems? Or, perhaps, as Senator Scott seems to indicate, some of the State agencies or a State secretary of commerce should be brought into it more.

What about the universities? Are they ready to do this? secretary of commerce should be brought into it more. sities have highly qualified people who would be in a position to develop the plans and manage the program.

As indicated, there is a great emphasis on the teaching aspect of this program, and the teachers in universities of course are qualified, many of them do have, through their courses and their research and in addition other activities, an intimate knowledge of industrial operations in the State in question. So we think that, by and large, there are universities well qualified to do this.

In some States, there has been emphasis on economic development activities, and there may not be the necessary skill and experience in the State university. In such a case the Governor may very well, for good reasons, prefer to designate a State agency. But we think the universities have a lot to contribute in this program.

Senator NEUBERGER. You have already brought out in an answer to a question——

Senator LAUSCHE. Would the Senator yield for a question?

Senator NEUBERGER. Surely.

Senator LAUSCHE. Isn't it a fact that in many States the universities have been designated to administer the Agricultural Extension program?

Secretary CONNOR. Yes, that is true. I think Secretary Hollomon can amplify what I have said in this connection.

Mr. HOLLOMON. I should like to make a response to both comments, for clarification. There is no difference between the Scott bill and the administration bill with respect to these people who will carry out the program. The institutions that will carry out the functions, that is the accredited institutions that give a degree in engineering or business administration, or other qualified nonprofit institutions, are the same in both the bills.

Senator NEUBERGER. I see. I was confused because Senator Scott wanted to substitute the word "agency" there.

Mr. HOLLOMON. Only for the designated agency which would make the plan and to carry out the administration. Not for the institutions who would do the work.

This is a subtle difference, but there is a difference nevertheless.

Senator NEUBERGER. You have already answered about the research, that this does not affect any research, but how does this act relate to the civilian industry technology program that was proposed before your term, in 1963 I think?

Secretary CONNOR. I think Secretary Hollomon can answer that best.

Mr. HOLLOMON. There was an appropriation request for funds for activities which would assist in the development of technology related to industry. A part of that program was for the support of research. S. 949 does not contemplate any support for research and differs, therefore, in that marked degree from the earlier proposal.

Senator NEUBERGER. We were discussing this 50-percent formula. If private industry is going to benefit from this; is this State matching money, this 50 percent? Where does private industry come in, in the financial support?

Secretary CONNOR. There can be contributions to the State's share of the cost from private industries that will benefit. We expect in fact that as the program develops there will be substantial contribution from industry.

Senator NEUBERGER. Will it have to be channeled to the State? Will they pay the State? How will this work?

Secretary CONNOR. It would be part of the State's 50 percent or more contribution. From an administrative point of view, Mr. Hollomon, how would that work?

Mr. HOLLOMON. The designated agency, or the person presenting the plan for the State, certified by the Governor, would indicate the source of the matching funds. Those matching funds would go directly to the institutions that were carrying out the plan. It would not have to be channeled through the designated institution or agency for administrative reasons. In other words, if the group of industries—to take a specific example—wanted to provide matching funds for the program to be carried out at the University of Ohio, then these funds would be provided directly to the institution, but they would have to be accounted for in the State plan.

Secretary CONNOR. But in no event would they come to the U.S. Treasury.

Mr. HOLLOMON. No; or necessarily even to the State treasury.

Senator NEUBERGER. I see.

Suppose you want to stop the program. Can you stop it?

Secretary CONNOR. Are you talking about a particular State?

Senator NEUBERGER. Yes.

Secretary CONNOR. There would be, from each State, a plan which would cover a 5-year period, but the program itself would be carried out in annual installments. There would be a commitment from the Department of Commerce only for the money to match the State contribution for 1 year, and then the matter would be taken up again for the next year of the program.

Senator NEUBERGER. You feel this program would work better in individual States, rather than creating regions, like an agricultural region, or industrial region.

Why is it directed to 50 States, rather than regions?

Secretary CONNOR. The economic problems vary widely, as you know, from State to State. There are some parts of the country where the economic situation may have characteristics that are identical, or nearly identical, in several adjoining States. There is provision in the bill for those States, if they so decide through their respective Governors, to get together in a common program. There could be one administrative agency that is the designated representative for several States. So there is provision for regional administration, if this is desired.

Senator LAUSCHE. Will the chairman yield?

Senator NEUBERGER. Yes.

Senator LAUSCHE. I think if you confined it now to regions, you would have vigorous opposition from the Governors. They are zealous of their prerogatives, and want these programs channeled through the State governments. But I think there are some places where they might want to form a region, and you will permit that to be done?

Secretary CONNOR. Yes, Senator Lausche. We would not expect that two or more States would band together for carrying out an entire program. But it might be that there would be in one State a particular university that would have special qualifications that would make it possible for its services to be used by several adjoining States. This legislation would make it possible to do that.

Senator LAUSCHE. I think that principle has already been carried out in other fields of operation, where one State has an excellent

medical college, another an excellent dental college, and they organize so all of them obtain the benefit of the better institutions.

Senator NEUBERGER. Yes, I know we are doing it presently with Oregon and Washington over a new oceanography laboratory, and it appears to be more economical and better.

I have just one more point, and that concerns the term "technical services." What are the limitations of the term "technical services?" Do we define technical service?

Secretary CONNOR. Secretary Hollomon?

Mr. HOLLOMON. We tried to be as explicit as we could, with respect to technical services. These are described in section 2 of the act, which specifies that they are aimed at services which would enable business, commerce, and industrial establishments to acquire and use scientific and engineering information, through such means as, first, analyzing the problems to determine opportunities for applying technology—this means looking at what kinds of industry there is in a State, what the broad needs are.

The second is to prepare and disseminate technical reports or abstracts, microfilms, reviews, computer tapes, and other means of providing technical information.

Third is a referral service to identify sources of engineering and other scientific expertise. Here the example would be to make a list in the States of all of the technical institutions and what their expertness is, so that industry would know where to go to get technical assistance.

And finally, to sponsor workshops, seminars, extension courses, demonstrations and field visits, which would aid in the educational process of having people get to know what technical information is available. This is how the technical services are defined in the act.

Senator NEUBERGER. Thank you.

Senator LAUSCHE. I would like to ask one more question.

Senator NEUBERGER. Senator Lausche.

Senator LAUSCHE. Has there been introduced previously a bill that in substance corresponds with this program?

Secretary CONNOR. No, Senator Lausche.

Senator LAUSCHE. All right. You have excluded the authority to engage in research, is that correct?

Secretary CONNOR. Yes, that is correct.

Senator LAUSCHE. In this program. You will do no research work of your own?

Secretary CONNOR. That is correct.

Senator LAUSCHE. I thought Mr. Hollomon said one previous program did provide for research, and it was abandoned.

Secretary CONNOR. Senator Lausche, if I may answer that, the earlier proposal that didn't get anywhere and is considered dead, started from a different approach than this. In the earlier proposal there would have been direct research activities by the Federal Government. This particular approach is quite different.

Senator LAUSCHE. That original proposal never reached the Congress?

Mr. HOLLOMON. That original proposal only reached the Congress through the appropriations process.

Senator LAUSCHE. I see. Did you discuss among yourselves the advisability of having this program given the right to do research work?

Mr. HOLLOMON. Yes, we did.

Senator LAUSCHE. And you concluded it should not be given the authority to engage in research?

Mr. HOLLOMON. That is correct.

Senator LAUSCHE. Why?

Mr. HOLLOMON. We felt that there is broad need for being sure the results of research and development are made generally available throughout the country. There are several aspects of the problem of using the latest science and technology for industrial development. One is, of course, the availability of research—that you do it, and that results are produced. But, equally important, is to be sure that these results are made available to everyone who can use them. We felt that we should limit the bill to that activity, and have Congress decide whether or not that was a good program and not to confuse the issue with the question of support for research. That issue should be given separate consideration. It is really a quite more complicated problem.

Senator LAUSCHE. Did you explore the proposition that there is research work done by many agencies of the Government already and therefore it would be unwise to begin duplicating by having your Department do it?

Mr. HOLLOMON. Yes, we did and we felt that additional research was not the main problem now.

Senator LAUSCHE. You didn't reserve to yourself the proposal that you will first get this bill through and then you will come in and ask for authority to do research work?

Secretary CONNOR. I would like to speak to that. There is no thought, Senator Lausche, that this proposed legislation would be followed by a proposal for a broad industrial research program.

Senator LAUSCHE. Thank you very much.

Senator NEUBERGER. Senator Brewster?

Senator BREWSTER. One final question.

Is there any opposition to this proposal from private industry, from consultants, such as engineers, chemists, radiologists, who, in part, consult and advise private industry on types of information for which this program will substitute?

Secretary CONNOR. Senator Brewster, we think there may be some differences of opinion on emphasis, but we know of no opposition to the principle of the bill.

Senator BREWSTER. Thank you.

Senator NEUBERGER. Thank you very much for your fine discussion of this bill. I feel more illuminated about it than I did an hour ago. We were delighted to have you.

(Senator Scott's statement follows:)

STATEMENT BY U.S. SENATOR HUGH SCOTT, REPUBLICAN, OF PENNSYLVANIA

STATE TECHNICAL SERVICES ACT OF 1965

Madam Chairman, I appreciate this opportunity to express my support of legislation to enable the Federal Government to join the States in close partnership with universities and other educational institutions to establish technical services programs designed to put into the hands of local business and industry the latest and most useful findings of science and technology. The purpose of this program

is to promote industrial modernization and economic growth and thereby to improve the competitive position of American business and industry in world markets. It can result in the development of new products, an indispensable ingredient for spurring the expansion of a company's sales. It can develop new technologies to aid in the revival of declining industries.

The program to be established by this legislation would be a great help to the industrial complex of Pennsylvania. Surveys could be made to determine what the needs are for particular types or groups of industries. Then, the participating educational institutions in my Commonwealth could set up appropriate technical services programs, either through specialists or by the normal educational processes for those persons in industries who could benefit from this work.

Under the enlightened leadership of Governor Scranton, the Commonwealth of Pennsylvania, through such organizations as the Committee of 100,000 and the Governor's council on science and technology, has tried to develop a mutually beneficial liaison between government, industry, and the academy to spur Pennsylvania's industrial expansion and economic growth. A technical services program can improve this growing relationship.

Although, for these reasons, I strongly favor this legislation, I feel that the administration bill, S. 949, can be improved in three major respects. I have, therefore, introduced for the committee's consideration my own bill, S. 2083, embodying the changes I propose.

First, section 3 of S. 949 unnecessarily ties a State's hands in designating an agency to administer its technical services program. It requires the Governor to explain his designation if that agency is not a State university or land-grant college. I understand that several States have indicated their desire to designate a Government agency, such as a Department of Commerce, to administer the program because of that agency's intimate involvement in administering programs to develop the State's industrial climate and to improve its economy. If this is their desire, they should have that option. Designating a Government agency to administer a State's technical services program would in no way downgrade the important role to be played by the educational institutions. Indeed, under my bill as well as S. 949, the designated agency is required to consult all qualified institutions in the State in formulating its 5-year plan and its annual technical services program. They will thus have a voice in developing the program. I feel strongly, therefore, that the State should have more discretion in deciding who is to administer the program.

Second, States should have the opportunity to utilize an existing agency to perform the review and evaluative function set forth in section 10 of S. 949, which authorizes the designated agency to establish an advisory council for this purpose. My Commonwealth, for example, already has the Governor's advisory committee on science and technology composed of 15 experts in various fields of science and engineering. This body will be involved in Operation Alert which, in Governor Scranton's words, "is a unique new program designed to get Pennsylvania in on the ground floor of economic opportunities flowing from new scientific and technological advances." The advisory committee might well be the appropriate agency to serve as the Advisory Council envisioned in section 10 of S. 949 and S. 2083.

Finally, Madam Chairman, I feel that Congress should have the opportunity to review and evaluate the effectiveness of this technical services program after a reasonable time has elapsed. S. 949 gives an open-ended authorization to the Secretary of Commerce which is limited only by the amount of funds to be put up by the States and other non-Federal sources. My bill establishes annual ceilings for each of the first 5 years of the program in the total amount of \$105 million. This is a generous figure based on Commerce Department estimates that the first year of the program will cost the Federal Government \$5 million while the ultimate annual cost is estimated at around \$30 to \$40 million.

With these three modifications and some other proposed changes embodied in my bill, I think that this legislation can make a real contribution to the industrial and economic growth of Pennsylvania and other States and regions of this Nation.

Senator NEUBERGER. Our next witness is Dr. Donald Hornig, special assistant to the President for science and technology.

**STATEMENT OF DR. DONALD HORNIG, SPECIAL ASSISTANT TO THE
PRESIDENT FOR SCIENCE AND TECHNOLOGY; ACCOMPANIED BY
WILLIAM T. KNOX**

Mr. HORNIG. Thank you, Madam Chairman. I have with me Mr. William T. Knox, of the Office of Science and Technology.

Madam Chairman and members of the committee, I am very pleased to appear before you to express my views on the State Technical Services Act of 1965 proposed by the Secretary of Commerce.

I might say I have only just seen Senator Scott's bill, so I have not made any detailed comparison, and I am not really prepared to discuss it.

My position on this bill is clear: it has my wholehearted support. It is a bill that has been endorsed and recommended by President Johnson. Its presentation to the Congress follows from careful study and drafting by the Commerce Department and other agencies of the Government. The bill has interest and support from small and large businesses, practicing engineers, States, and academic people throughout the country.

Since the outbreak of World War II, the Nation has spent more than a hundred billion dollars on research and development, principally in fields directly related to military hardware but also in pure, unapplied research and to some extent in fields related to civilian applications. This investment has come from both public and private sources. It is clearly in our national interest for the results of this research and development to have the widest possible distribution and application.

Some of our economists estimate that about two-thirds of our economic growth results from technological advance. Most of that derives from the \$6 billion or so that are invested each year in private R. & D. activities. The rewards for a higher level of technology, in terms of economic growth, higher standards of living, and the gains in employment associated with dynamic industrial development are thus surely worth seeking.

The Office of Science and Technology, certainly not alone among various interested groups and individuals, has for over 2 years been examining means and proposals for encouraging the widest application of science to advancing our industry.

We have received many proposals from the business community suggesting ways to encourage rapid adoption of new technical discoveries and information. We have held meetings with senior representatives from technical industry to discuss these proposals and develop additional ones. We have reviewed many proposals with agency experts to obtain their opinions on their practicality from an administrative standpoint.

None of the proposals we have considered offers a panacea. None can assure a greatly increased rate in the application of the results of scientific research to the technology of our daily life. Many of them have potential merit, but each proposal poses questions that can only be resolved by trial. We must be willing to experiment with new measures to narrow the gap between what is known and what is actually used; between the best industrial techniques based on latest technology and outmoded, inefficient practices.

The bill before you is such an experiment. It is a good one, and I feel it has high likelihood of success. Even if it is successful only to the extent of increasing our national rate of return on our investment in science by 1 percent, it will have more than paid for itself on an economic basis alone, not considering other valuable results.

I will not recount in detail the mechanisms by which the bill would accomplish its purpose of encouraging and supporting nationwide the greater availability of modern technology to American industry. We have already valuable and rewarding experience with extension programs of this sort within individual States, and of course the successful record of our longstanding Federal agricultural extension programs, while by no means an exact parallel, is to some extent analogous.

The proposed act, although modest in scope, nonetheless breaks new ground.

It seeks to strengthen the Nation's economy and productive power at a point in the chain of industrial activity that has hitherto been relatively neglected—the transfer of existing science and technology into actual productive use. For R. & D., in general, high premium must be placed on the development of systems for the storage, handling, and retrieval of scientific and technical information. However, the transfer of technology to the potential industrial user requires more than having information stored and available; it must be actively disseminated. The needs and opportunities of each firm differ and the transfer mechanisms and methods must be adapted to the user. This bill recognizes the need for such flexibility, through sponsoring the development of local solutions to local problems in close cooperation with local industry.

Another important aspect of the bill is its clear and specific concern that the benefits of technological progress be made widely available throughout the country despite geographic variations in industrial activity. While the bill is not designed as an area of relief measure, it would in many parts of the country make technical services to industry available on an organized basis for the first time. The Congress has shown increasing appreciation—especially in relation to R. & D. activities—of the importance of achieving fuller development of local potentialities all across the country.

Each State would, under this bill, be able to work in its own way with its own industries and universities to strengthen its economic situation, with the consequent benefits to its people in jobs and opportunities.

In this regard, section 7 of the State Technical Services Act includes a useful device for what President Johnson has called creative federalism. By providing for increased Federal matching contributions to regional and interstate technical services programs, the bill encourages the strengthening of regional cooperation in the solution of regional problems.

Another, less tangible result of the experiment may well prove to be the most significant. The operation of the bill's provisions will inevitably work toward establishing a closer tie between technical universities in a region and the technical industry of that region. There are outstanding examples in the recent past where such a relationship has proved highly beneficial to both parties, not only in contributing

to the economic growth in the community, but also in stimulating the university's academic programs.

Thank you very much for this opportunity to speak on behalf of this pioneering measure, and I would be glad to answer your questions.

Senator NEUBERGER. If I may be slightly facetious, I believe women take to new ideas faster than men. They are always willing to try a new cosmetic, or a new frozen food, or a new something or other. It amazes me that we have to go to this extent to stimulate industry to use research and new ideas. Maybe if more women were in business——

Senator LAUSCHE. Dr. Hornig, you answer that question. She seems to be putting it to me, but you assume the onus of answering it, please.

Senator NAUBERGER. Yes. But isn't that true? I mean, women will really take on, sometimes foolishly, a new cleaning thing or a new this or that. As you were talking I wondered why we have to stimulate them to take on this new research?

Dr. HORNIG. Well of course industry is highly variable in this respect. Much of our industry doesn't need any stimulation at all, some of it invests very heavily in its own research and development activities, its own information activities, and their people seek out and find whatever can help them. On the other hand, many industries are in a position of simply not knowing what is available, either because they are too small, because they don't have the capital, or because they have no tradition and haven't been in contact with the new developments. And I think in a certain sense what we are talking about is an advertising agency. I am not sure the Secretary would like it designated that way. But it is to present to industry and perhaps to even push at them a little bit the things they may not have people available to seek out themselves.

Senator NEUBERGER. I think that is one of the virtues of advertising; it creates markets; it makes people think they need and want things, whether they do or not, and it stimulates a certain amount of business.

Dr. HORNIG. You know libraries have reference services which on a small scale operate in the same way we are contemplating here.

Senator NEUBERGER. I like the connection with the universities, the centers of learning, because I think Senator Lausched made a good point about the agricultural connections. I think the universities with their research could instruct both men and women on farms, on home economics, canning, and soil, and so on, and certainly we have moved into a technological age.

Senator Lausche?

Senator LAUSCHE. Secretary Connor said there is no contemplation, at present at least, of expanding this program into one where the agency of Government would itself engage in research and development.

In connection with that subject, because of your position, would you mind telling us what research and development agencies we now have in the Government in different fields?

Dr. HORNIG. Yes. The largest research and development agency we now have is the Department of Defense, which spends approximately half of all of the research and development funds. Now its research and development is entirely aimed at military systems, military hard-

ware, defensive systems, military medicine, and so that although there may be byproduct effects on industry, the country looks for its benefits from the military, or DOD's R. & D. program in terms of its defense.

Senator LAUSCHE. How much is the Department of Defense spending on research and development?

Dr. HORNIG. In the current fiscal year, I believe it is \$7.2 billion.

Senator LAUSCHE. In research and development?

Dr. HORNIG. Research and development, test and evaluation.

Senator LAUSCHE. Now we go to the second largest.

Dr. HORNIG. I think the second largest is NASA, and again, to the best of my knowledge, that is about \$4.9 billion. Substantially all of their program is classified as research and development. Now my same comments apply, that, of course, NASA makes, through their technology utilization program, an effort, a very good effort, to make the results of their R. & D. available to industry, but it is primarily aimed, of course, at developing our space program, and its practical application through things like communications and weather satellites.

I believe the third largest R. & D. agency would be the AEC, which spends about one and a half billion dollars per year on R. & D., and again this is aimed at making atomic energy and its by products available to the American community.

Now after that, let's see, the Department of Health, Education, and Welfare spends approximately \$800 million each year—this is the current year, rather than next year's budget—spent about \$800 million this year and, of course, this R. & D. is entirely aimed at the health of the Nation.

Senator LAUSCHE. Is the agency, National Institutes of Health, the one that does the work, primarily?

Dr. HORNIG. That is by far the biggest component, yes.

Senator LAUSCHE. The Agriculture Department does research work, doesn't it?

Dr. HORNIG. Yes. And I think their research expenditure is approximately \$200 million a year, but I would have to check that figure precisely.

Senator LAUSCHE. Those are the primary ones?

Dr. HORNIG. Yes. I think we have now accounted for more than \$14 billion of the \$15 billion.

Senator LAUSCHE. Thank you very much.

Senator NEUBERGER. I didn't know AEC had that much money in R. & D. I hope they will use some of it to explore underground transmission lines, instead of the overhead ones to deface some of our highways. I am interested to know that they have that much money and I think they ought to do a little research in natural beauty.

Dr. HORNIG. It should be made clear that the largest part of AEC's research and development funds are weapons development.

Senator NEUBERGER. Weapons development?

Dr. HORNIG. That is still the biggest single component.

Senator NEUBERGER. What about for peaceful use, for creating nuclear power?

Dr. HORNIG. Well, they have a very good program for the development of more advanced reactors, which aim at the civilian power, but that is relatively small compared to weapons development.

Senator LAUSCHE. Is it fair to say that out of practically all of these research and development projects, there come byproducts that may be usable in fields completely foreign to the one that was contemplated while the research and development was being done?

Dr. HORNIG. This is quite correct. It is often hard to pin down the details, although sometimes, as in the case of the computer industry, there are dramatic examples.

Senator NEUBERGER. Thank you very much, Dr. Hornig.

The next witness is Philip K. Reily, vice president of the Atlantic Research Corporation, Alexandria, Va.

STATEMENT OF PHILIP K. REILY, VICE PRESIDENT, ATLANTIC RESEARCH CORP., ALEXANDRIA, VA.

Senator NEUBERGER. I take it, Mr. Reily, you are representing how industry will use this legislation?

Mr. REILY. That is correct. I was going to mention I was the first representative of the private sector of the economy here, and I appreciate being here very much.

Senator NEUBERGER. It is very good to have your point of view. Thank you.

Mr. REILY. On behalf of my company, Senator Neuberger and Senator Lausche, and very strongly on my own personal behalf, I want to express my appreciation for being able to be with you here this morning.

Our company, after very careful consideration, has endorsed this act, and has expressed this endorsement in a letter from our president, Mr. Lee Rice, to Senator Magnuson, and I would like to read from that letter.

The letter reads:

DEAR SENATOR MAGNUSON: At Atlantic Research we have followed with interest the development of the legislation entitled "The State Technical Services Act of 1965," now being considered by both Houses of the Congress.

As an advanced technology industry, it is our considered opinion that this legislation will provide an important avenue for the application of new technology to commerce of many kinds throughout the United States. The rapid growth of American technology is appreciated by every citizen; the extent of its application, except in a very few advanced industries is disproportionately small. In fact, more than half of the value added by manufacture in the United States is accounted for by companies which conduct only 10 percent of industrial research and development. Thus, there is much for our country to gain by vigorous action—such as that which would be stimulated by the State Technical Services Act—to apply our new and developing technology as broadly, promptly, and effectively as possible.

Accordingly, we are hopeful that the State Technical Services Act of 1965 will be accorded favorable consideration and prompt enactment by the Congress.

In my testimony here this morning I plan to develop two points. First, I want to characterize, for a very few minutes, the company which I represent, because I believe as you mentioned, Madam Chairman, that the primary significance of our endorsement stems from the nature of the business we do.

And second I plan to describe some observations that I made while acting as chairman of the Middle Atlantic Regional Conference on State Science and Technology. This was a civic activity which I undertook in support of the proposed legislation.

Contrarywise, I do not intend to present any general enumeration of the merits of the bill as the earlier witnesses have.

Just for a moment then, to say who this is speaking to you in a corporate sense this morning, Atlantic Research is an independent, advanced technology organization. About three-quarters of our work is in aerospace, and we rank 29th among research and development contractors and 69th among all prime contractors with the Department of Defense. The remaining one-quarter of our work is devoted to a wide range of commercial technology. Atlantic Research has been described to this Congress by Admiral Raborn, then head of the Polaris program, as having made the Polaris missile feasible through its research and development work on aluminum containing solid propellants. (Hearings on Atlas and Polaris missiles before the Committee on Science and Astronautics, U.S. House of Representatives, 86th Cong. 1st sess., July 28 and 29, 1959.) Senator Byrd entered into the Congressional Record (Proceedings and Debates of the 86th Cong., 1st sess., vol. 105, No. 129, July 30, 1959) a Navy certificate of commendation awarded to Atlantic Research for advancing the state of the art of solid-propellant rocketry. And the company has been cited by the Coast Guard for work in electronic communications.

Founded in 1949, Atlantic Research has since been among the very fastest growing companies in the United States. Its staff of some 2,900 people, working in six States, completed over \$55 million in business last year. So I use this as a brief introduction of who is endorsing this bill.

Having demonstrated repeatedly, in several thousand development programs, the tremendous advances which attend the enlightened application of known technology, we at Atlantic Research are confident that the efficiency and productivity of many other sectors of the national economy can be markedly improved also by deliberate efforts to exploit existing technical knowledge. American entrepreneurs must be given ready access to an ordered body of technology and encouraged and assisted in selecting and applying appropriate elements to their own processes and problems.

It is our understanding that the fundamental purpose of the proposed legislation is to improve and expand the application of known technology by American industry. Our enthusiastic support is founded on our own confidence that achievement of this purpose will earn important new stature for the commerce of the United States, both at home and in world markets.

I would like to depart from the prepared text for a moment just to give you a notion, in our own terms, of just what this body of technology is, and some carefully calculated estimates. The National Education Association came up with the conclusion that in the 1,750 years following the life of Christ the total body of man's knowledge doubled. In the subsequent 150 years, to 1900, that body of knowledge doubled again. In the 50 years to 1950 it doubled again, and in the decade to 1960, it doubled a fourth time. That gives you a notion of how fast our knowledge is growing. So this is not some stream flowing by, but rather it is an avalanche of knowledge that this bill makes an effort to put to work.

I do want to point out that we do not anticipate any major direct benefit to our company to attend enactment and implementation of the

State Technical Services Act. Already working at the technological forefront, we would not expect to expand the sophistication of our own technology. Like others in the field of engineering consulting, we would welcome the assignments that could result from an increased effort in technology utilization; however, this is such a small part of our own business that prospective gains could not justify our effort on behalf of the act.

In short, our support is enthusiastic, realistic, and solely in the national interest.

Now I would like to turn to the subject of regional interest in the State Technical Services Act as evidenced by participation in related conferences, particularly the Middle Atlantic Regional Conference on State Science and Technology.

At the First Annual National Conference on State Science and Technology in February 1964, at which I represented the District of Columbia as chairman of the science bureau of the Metropolitan Washington Board of Trade, it was concluded that a series of regional meetings should be held, the theme of which would be "Applying Science and Technology for Economic Development."

In pursuit of this objective, I organized and conducted the first such regional conference in the United States. Since that time, a similar conference has been conducted in the Midwest, and a third will soon be held in the Rocky Mountain region. Thus, approximately half of the States are participating in such regional conferences within little more than a year after the conclusion was reached. I consider this the strongest sort of evidence of regional interest and support.

The first Middle Atlantic Regional Conference was held in Washington in September 1964, and the second will be held in the Research Triangle Park, in the Raleigh-Durham area of North Carolina, in the fall of 1965. Participating were Delaware, Maryland, North Carolina, South Carolina, Tennessee, Virginia, West Virginia, and the District of Columbia. Delegates were drawn from the governmental, educational, and industrial communities of each State. In addition to capable representatives from high levels in each State government, South Carolina was represented by a university president, and Delaware, North Carolina, and Virginia by deans of engineering. Officers of major industrial activities also represented Delaware, Maryland, North Carolina, Virginia, and the District of Columbia.

In our work, we correlated information on the individual States to compile an economic profile of scientific enterprise in the Middle Atlantic region, and we had a wide-ranging symposium on the interrelationships between State government, education, and industry in technical activity.

Throughout our preparations and actual conduct of the First Middle Atlantic Regional Conference on State Science and Technology, I was thoroughly and repeatedly impressed by the intense interest, active cooperation, and plain hard work demonstrated by the fine people in all of the participating States. Their vigorous participation not only insured the success of our meeting but provided the soundest possible evidence of regional readiness to take prompt advantage of the provisions of the State Technical Services Act of 1965.

Thus, the Commerce Committee can see that the Atlantic research endorsement of the proposed legislation is both idealistic, in a sense,

and practical. Idealistically, we can project our own success in application of technology to anticipate great commercial progress attending enactment of the State Technical Services Act of 1965. Practically, I have worked closely with many of the very people who will be responsible for implementation of State and regional programs under the proposed legislation and can attest to their intense interest in the act and to their abundant ability and dedication.

So these are two separate points of view, which perhaps could be interesting and valuable to you, in your deliberations.

Senator NEUBERGER. Thank you. Senator Lausche?

Senator LAUSCHE. Is there in existence any national association, the membership of which comprises institutions of your type?

Mr. REILY. No, sir, there is not. There have been a couple of efforts to form such a thing, but they have never gotten very far.

Senator LAUSCHE. This Middle Atlantic Conference—is that what you called it?

Mr. REILY. Yes, sir.

Senator LAUSCHE. Was that made up of private researchers, or did it also include governmental agencies, who are engaged in that work?

Mr. REILY. We had quite a cross section at that meeting. There were several companies doing research and development like our own, both profitmaking like our own, and nonprofit. There were State officials present, Federal officials present, private industrial people, and educators.

Senator LAUSCHE. Is this Middle Atlantic Association a completely organized unit in which membership is applied for and membership dues paid?

Mr. REILY. No, it is just about as far in the opposite direction as it could be. It is a very loosely constituted informal voluntary association.

Senator LAUSCHE. So that undoubtedly it is not in the position of expressing an opinion on the merits of this bill?

Mr. REILY. That is correct.

Senator LAUSCHE. Do you know of any association in the country that would occupy a position where they could express an opinion?

Mr. REILY. Our company is not represented by any trade association or society which we would consider to be in a position to speak for us in this area. My comments had only to do with my sense of the conference, and certainly they were not an official position.

Senator LAUSCHE. We are very proud in Ohio of our Batelle Institution.

Mr. REILY. And well you might be. We work very closely with them in some of our defense work.

Senator LAUSCHE. That is a private research agency. I am delighted with your testimony. It is succinct and to the point.

Mr. REILY. Thank you. I hope it has been of some value to you.

Senator NEUBERGER. Thank you very much. You are the first of some representatives of nongovernment organizations who will testify, and tomorrow at 10 o'clock the committee will resume with other witnesses on this subject.

(Thereupon, at 11:50 a.m. the hearing was recessed, to reconvene at 10 a.m. the following day.)

STATE TECHNICAL SERVICES ACT

WEDNESDAY, JUNE 9, 1965

U.S. SENATE,
COMMITTEE ON COMMERCE,
Washington, D.C.

The committee met at 10 a.m. in room 5110, New Senate Office Building, Hon. Maurine B. Neuberger presiding.

Senator NEUBERGER. The committee will come to order.

We will hear first from Dr. George Marra, head of the wood technology section of the Division of Industrial Research, Washington State University, in Pullman, Wash.

We are glad to have you, Dr. Marra.

STATEMENT OF DR. GEORGE G. MARRA, HEAD, WOOD TECHNOLOGY SECTION, DIVISION OF INDUSTRIAL RESEARCH, WASHINGTON STATE UNIVERSITY, PULLMAN, WASH.

Senator NEUBERGER. Dr. Marra, would you like to summarize your material, or do you wish to give it in its entirety?

Dr. MARRA. Madam Chairman, I would like to summarize it, and for this purpose I will be starting on page 8 of the prepared testimony. (Prepared text follows:)

The State Technical Services Act is a bill aimed at solving a crucial problem arising from the so-called explosion of science and technology. Technical information is now at flood stage, and the need for it in industry has never been greater. An item of information originally developed to solve one problem can also frequently solve many other problems. However, the channels by which the information and the problems might meet have become inadequate. It is the purpose of the act to improve these channels and thus promote industrial efficiency and economic growth.

The extent to which this can be achieved will determine the extent to which our society's needs will be met, the degree of assistance our Nation can give to young developing nations, the balance of trade, the world image of our political and economic system, and finally our performance in any armed conflict that should arise.

The bill as proposed is well conceived and its provisions, if put into practice, should result in a significant impact on these problems.

The industrial pattern of the State of Washington, like many other States, is quite diverse. It embraces the most advanced technologies as well as the least advanced. A large share of the industrial output is based on indigenous resources, while some is based on materials imported from other States or from foreign countries. As a coast State, it is keenly aware of opportunities and problems involving world markets, and is concerned with the ultimate necessity of competing successfully in these markets.

With respect to the State Technical Services Act, Washington industries are in a position to exploit technological advances on many fronts. From aerospace and nuclear energy, to stone and clay products, an extremely wide range of technical self-sufficiency exists which will require an equally wide range of approaches in presenting technical services such that, hopefully, all can have

the opportunity to gain in near-equal degree. Technical self-sufficiency is a term which expresses company capability in the area of science and technology.

Wide variations in technical self-sufficiency exist within, as well as among, industries. For example, within the wood-using industry, establishments producing pulp and paper are at a higher level in this respect than those producing plywood, and the latter are higher than those producing lumber. The larger integrated units are also generally at a higher level than the smaller units producing only one type of product.

The range of technical service needed to match these varied needs of industry is provided in the act as presently proposed. Dissemination of raw technical information would represent one end of this spectrum of service, while workshops and demonstrations represent the opposite end.

Companies ranking high in technical self-sufficiency will require much less service effort to bring about a practical awareness of new techniques and information than will those ranking low in this capability. For the latter, emphasis on demonstrations and critical screening of information will be most helpful.

The entry to this low end of the capability scale will require special care and will call for some ingenuity in extension techniques. Considerable activity will need to be expended in the initial preparation of the voluminous, complex scientific and technical knowledge in order for the extension process to be effective.

The sheer bulk of this information, and its abstract, anonymous character when displaced from its point of origin, represents one of the major stumbling blocks to its use by industry. Accordingly, it needs to be sorted and resorted, and partially digested, before it can hope to be matched to some existing local problem. This process is all the more difficult in connection with the backward industries in which an inability to identify problems exists in painful measure.

TECHNOLOGICAL ADVANCEMENT AND TECHNICAL SELF-SUFFICIENCY

When the massive findings of science are placed usefully in the hands of American enterprise, the end result will be technological advancement on a grand scale. The economic growth which will emerge from such advancement is the major objective of the State Technical Services Act.

There is good reason to believe that technological advancement is directly related to technical self-sufficiency. With this premise as a basis, it is instructive to reflect on the various patterns of technical aid and their possible effect on technological advancement.

Figure 1 presents several concepts of technical aid as imposed upon the assumed relationship of technological advancement and technical self-sufficiency. For the purposes of this illustration, these three factors are represented as scalar quantities with undefined units and undefined limits.

Diagram I would represent any attempt by which technical aid might be given to industry in some proportion relative to need as expressed by existing position on the scale of technical self-sufficiency. If such a distribution of technical aid could be executed effectively, one might expect that highest gains would be made by the lower groups while the higher groups remained essentially static.

As a second possibility, position on the scale of technical self-sufficiency might be ignored, and the distribution of technical aid contrived on some equal basis. This situation would be represented in diagram II of figure 1. In this case, the expectation might be that all would gain equally, and thus produce a general elevation in manufacturing proficiency with no relative changes in competitive position.

Actually, neither of these possibilities is realistic. In the first place, the extreme range of technical self-sufficiency which exists among industries, as well as between industries, would make very difficult the establishment of an equitable distribution pattern based on this factor.

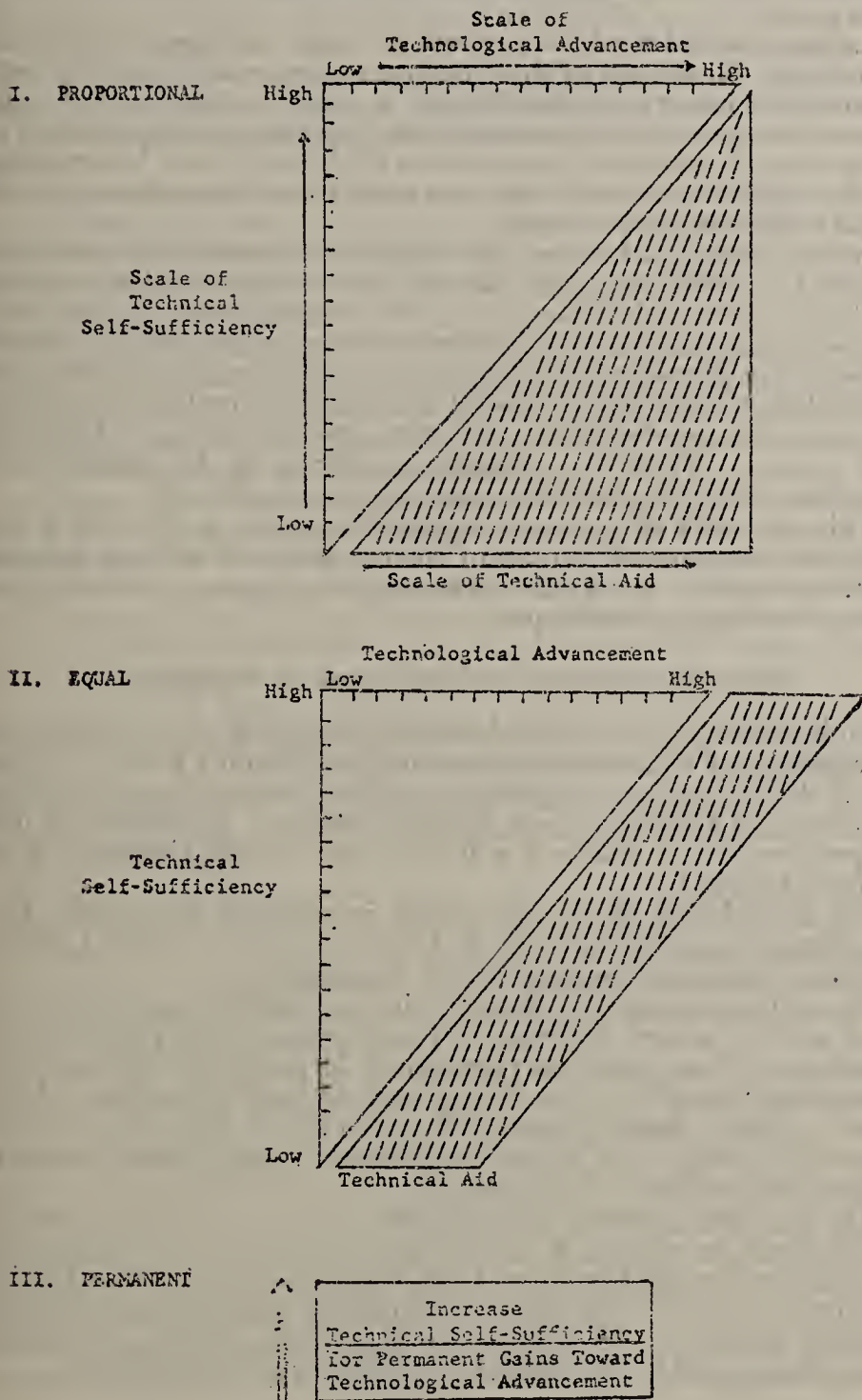
Secondly, regardless of the manner of presentation, companies high in technical self-sufficiency would always make the greatest gains from a given input of information.

Thirdly, the largest area of discrepancy exists between those companies with some technical self-sufficiency, and those with none. For the latter group, any technical presentation, perhaps even at the demonstration level, is likely to produce little lasting effect on their technological advancement.

The foregoing leads to the conclusion that one of the more permanent routes to technological advancement is to promote technical self-sufficiency. This tends to

sharpen the internal drive for new information and leads eventually to a decreasing external effort to spoon-feed technical aid. Increasing technical self-sufficiency is largely an educational effort that starts with company attitude and ends with employment of one or more technical people.

Figure 1

CONCEPTS OF TECHNICAL AID FOR INDUSTRY

To crystallize the meaning of the desired effect with respect to industry, an analogy might be drawn to an imaginary fishing problem. Supposing that the objective were to catch more fish and that one of two methods could be employed.

One method would be to increase the effectiveness of the fisherman by improving his dexterity with the rod, or getting new rods, reels, and lines, new lures, improved nets, and perhaps better information on when to fish.

Another method would be to stock the lakes and streams with more fingerlings. Now, each of these methods alone would probably result in more fish being caught, although it might be argued that unless proper fishing techniques are employed, the presence of more fish in the water does not materially increase the likelihood of one being caught. On the other hand, it seems obvious that if both were done, more fish would most certainly be caught.

In this analogy, of course, the fisherman's capability is related to technical self-sufficiency, while the fish represent technical information.

The implication, therefore, is that whatever educational effort is to be applied in conjunction with dissemination of information, a discrete and effective part should be directed toward permanent improvement in the ability to deal with technical and scientific developments. There is then some hope of achieving a continuous acceleration of technological progress. Otherwise, progress is likely to be discontinuous, fortuitous, or highly dependent upon outside stimulation.

Although such effort is not specifically stated in the bill, it may easily be incorporated in each of the categories of services proposed for the program. It may also be accomplished as some predetermined part of the extension technique.

INDUSTRIAL SKETCH OF THE STATE OF WASHINGTON

An important factor in the industrial potential of this State is the development of hydroelectric power on the Columbia River. At present, 11 dams are either completed or under construction wholly within the State and 5 additional are on State borders. In addition, a dual-purpose reactor at Hanford will soon add 800,000 kilowatts of new power to the total.

The availability of low-cost power is partially responsible for a significant aluminum industry in the State, and will have a bearing on future industrial developments in this region.

From the standpoint of payrolls in manufacturing activities, aircraft leads all others, followed by forest products, food products, and chemicals. These activities represented 74 percent of the total manufacturing payroll in 1964 ("Summary of Pacific Northwest Industries," Annual Review, Seattle First National Bank, April 1965). These industries would, therefore, probably be emphasized in any expanded technical effort in this State.

The aircraft industry is dominated by one very large company which deals in aerospace and other highly advanced technologies with heavy financial support from Government sources. This one company, together with the atomic energy works at Hanford, employs 75 percent of all engineers in the State. It has a very strong research arm and in this respect it is practically self-sufficient.

The forest products industry contrasts sharply with aircraft in being composed of many manufacturing units. This industry is based on vast, renewable resources which at present cover more than half of the land area of the State. Much of its equipment needs and critical chemical requirements are produced locally in the State.

Producing primarily lumber, plywood, and pulp, the industry is composed of units ranging in size from the largest in the United States to the smallest. Technical self-sufficiency among these units also describes a similar extreme in range—from the best to none.

The principal farm products include wheat, milk, cattle, apples, and hay. Although this area is well supported in regard to research and extension, farm products are finding increasing use in industrial applications.

The chemicals industry, while not large in terms of payroll, plays an important function in support of other industries. The manufacture of resins for plywood adhesives may be cited as an example. Other chemicals include oil, magnesia, paint, and heavy chemicals such as lime, and diatomite.

This industry also embraces much of the activity of the Hanford Atomic Products operation which produces radioactive substances for many purposes. The chemicals industry as a whole operates from a research base and is always ready to consider new developments having a bearing on products or processes.

Dr. MARRA. The supporting activities for industry at Washington State University occur primarily in the institute of technology which embraces the division of industrial research, the technical extension service, and the college of engineering. Food processing industries receive assistance primarily through the institute of agricultural sciences. General economic studies are carried on in the bureau of economic and business research in the college of economics and business.

The division of industrial research, activated in 1946, by an act of State legislature, is charged broadly with the objective of expanding the industrial base of the State. For this purpose it maintains a full-time staff of about 125 people distributed in 17 sections. About one-half of the staff are professional and the balance subprofessional and nonprofessional.

The sections are arranged to cover both the resources of the State and the various disciplines of science and engineering. Other sections cover community problems. For example, water, forests, and mining are handled as separate sections; similarly electrical engineering, mechanical engineering, and chemistry; and in the community group are highway research, and sanitation.

An advisory board of 24 people drawn from the economic community of the State meets twice a year to review the program of the institute of technology and advise on important policy matters.

The division operates partly with State allocation of funds and partly with contracts and grants from outside sources. Some sections vary from 90 to 10 percent in the distribution of funds. The State portion of support is used primarily for fundamental research and for the initiation of development projects, which if they prove promising eventually are supported financially by industry.

We have come to believe that this dichotomy in our program is quite essential. The contract program, of course, provides primarily for

the solution of critical problems in industry, but it provides what we think are two essential side benefits to our program. For example, there is associated with this program an educational effort which is aimed at management, for the purpose of favorably modifying their attitudes toward research. Eventually, a positive gain may be realized in technical self-sufficiency which will then produce the desired acceleration in technological advancement for the company.

The other side benefit from the contract program is an opportunity for the principal investigators to strengthen their grasp of broad, long-range industry goals, and corollary resource utilization philosophy. We believe this is one of the things that distinguishes the university approach to industrial problems and is quite essential to development of a sound program of assistance to industry.

The major output of the division of industrial research is technical literature in the form of special reports to industry, technical bulletins, and articles in scientific and trade journals. Correspondence and telephone consultations with industry on technical problems also account for a significant part of the total activity.

In addition, technical lectures and numerous plant visits are made in order to foster a feeling of interest, acceptance, and availability as the initial step in projecting the services of the university into the economic community. Much of this activity is in the nature of extension service and is estimated at about 10 man-year equivalents.

Senator NEUBERGER. May I interrupt you here? Do you seek out industry or are they now at a stage where they will come and ask for advice or confer with you?

Dr. MARRA. This division started with just 1 man and has built up to the present 125 through, I think, a reputation for solving problems and through the development of professional competence in certain areas. At the present time we operate without solicitation. Industry comes directly to us.

Senator NEUBERGER. What has brought this about?

Dr. MARRA. Well, I think perhaps that in addition to the recorded successes in solving problems is the fact that we are available and we understand the problems of industry. They have pretty generally accepted the type of service that we offer, and the limitations necessary because of our connection with a State institution.

Senator NEUBERGER. Is that what you meant when you said you had to explain to them the value of research?

Dr. MARRA. Yes.

Senator NEUBERGER. There was a block in some people's minds about the value of research; is that it?

Dr. MARRA. Yes. We recognize quite a range of technical capability on the part of industry, and those who are in the upper categories have no problem in this respect. Those that have no technical capability need to be educated on the value of problem solving activity at the company level.

Senator NEUBERGER. Did this have any relationship to the size of the industry or the volume or type of work?

Dr. MARRA. I am afraid it does. It seems to have a strong relationship to the size.

Senator NEUBERGER. In general, may one conclude that the bigger the industry the more they are aware of the value of technology?

Dr. MARRA. I am sure that is right.

Senator NEUBERGER. Thank you.

Dr. MARRA. The dissemination of scientific and technical information is the function of the Technical Extension Service. With a staff of five full-time people, this group conducts seminars, conferences, short courses, workshops, and clinics on specific technical subjects, both on campus and off campus. These are attended by industrialists, bankers, city officials, merchants, and others seeking the latest information in their areas of interest. This group also is engaged in the preparation and distribution of bulletins, films, and news releases on subjects of interest to industry and to the general public.

During the past year, the Technical Extension Service conducted 17 conferences and short courses with a total audience of 3,000. A total of 10,495 requests for technical publications was filled.

In considering an expanded extension program, it is possible that in some subject matter specialists may be needed in order to improve the service to certain segments of industry. For example, for the wood industry much of the scientific information of potential value will likely not bear any obvious connecting titles or clues. It would probably not be labeled "wood" for example, but might be labeled "organic chemistry" or something else. Consequently, any particular item of abstract information would have to receive some knowledgeable scrutinizing effort before it could be categorized as potentially useful to the wood industry. Considering the number of sciences and engineering disciplines impinging upon this field, the task of screening appears to be monumental. Alternatively, specific problem areas could be defined, and information then screened and categorized in relation to these limited areas.

The problem of handling information in order to make it useful is believed to be the key to success or failure in accomplishing the basic objective of this bill.

In addition to the new activity indicated above, the Technical Extension Service would attempt under the proposed State Technical Services Act to expand its program in the following ways:

(a) An expanded program of technical conferences from areas in the Institute not now covered. For example: (1) air pollution; (2) minerals beneficiation; (3) lubrication engineering; (4) high-voltage testing; (5) metallurgy; (6) transmission line vibration; (7) acoustics; (8) concrete products; (9) heating and air conditioning; (10) wood and pulp plant operations.

(b) Adult education short courses for the training and retraining of technical personnel in industry. So far we have done nothing in this field, but we consider it to be quite important.

(c) A concerted short-course program in the field of technical writing for the training, retraining, and improvement of writing techniques for scientists and engineers. We find much of the writing to be not up to standard, and it is quite disconcerting to search out a particular piece of literature and then find it is not useful because of being improperly written.

Senator NEUBERGER. I surely say "amen" to that. I have tried to read some material, especially in the health field, and it is such gobbledegook. I don't know why it can't be written in more direct language, especially if you want somebody to understand and make use of it.

Mr. MARRA. We have made several attempts in this regard and have not had much success. It is an exceedingly difficult task and we feel a new approach is necessary.

Senator NEUBERGER. British doctors write so beautifully. In work I have been doing in connection with cigarette smoking and health, I have found British reports to be written with clarity. They are read with ease. I am going to star that one and call it to the attention of my colleagues who are not here today.

Mr. MARRA. Thank you. To continue, (d) Expand present biennial Invitational Research and Development Conference to a weeklong, twice-a-year seminar which could be held in various industrial centers of the State and Northwest.

(e) Expand present technical demonstrations program of laboratory developments to help bridge the gap to commercial acceptance and production.

(f) Expand present publications distribution programs to a broader area and include other types of publications from industrial and governmental sources.

(g) Expand program of broad economic and market analysis for specific industries as related to available natural resources.

(h) A new program of traveling visual exhibits, both photographic and audio, to be taken to industrial centers to acquaint plant managers and technical personnel with the services to industry that are available.

(i) A possible new internship program for selected representatives of appropriate industries to work for substantial periods in research laboratories at the university, to learn research techniques and how to interpret research results.

(j) A new program of study to define and analyze major problem areas in industry.

(k) A new program of selected film clips or short-course films on new research breakthroughs and techniques for distribution to educational TV outlets or for direct distribution to appropriate industries.

(l) Develop a screening and referral service for technical and scientific information relevant to specific problems in the State.

The College of Engineering is engaged almost exclusively in the education of students for all forms of professional activity. This effort contributes directly to the factor of technical self-sufficiency in industry and provides the element needed for permanent gains in the direction of technological progress. At present, it is estimated that about a 1-man-year equivalent is devoted to extension-type activity. This is mostly in the form of technical bulletins and special lectures given at industrial conferences and seminars.

The bureau of economic and business research conducts studies of broad economic significance as well as studies of specific industries. Outstanding examples of these studies published in book form are the following: "The Development of Manufacturing Industry in the State of Washington," by William Wolman, 1958; "The Outlook for Western Forest Industry," by J. A. Guthrie and George R. Armstrong, 1961; "The Economics of Pulp and Paper," by J. A. Guthrie, 1950.

At present, the bureau operates with about a 1-man-year equivalent, with staff assistance drawn from the faculty of the College of Economics and Business. This type of analysis of industrial and eco-

conomic problems on a broad basis is considered to be highly important to any effort for stimulating economic growth of the region. Fortunately, the bill as proposed provides for support of such activity.

OTHER EDUCATIONAL AND RESEARCH AGENCIES IN THE STATE

The University of Washington in Seattle is the largest educational institution in the State and carries accredited curriculums in both engineering and in economics and business. It would, therefore, be one of the eligible participating institutions as defined in the bill.

Other educational institutions include Seattle University, Gonzaga University, and a number of junior colleges whose changing programs may eventually qualify them for participation in future technical aid plans.

In addition, the State department of commerce and economic development carries a substantial staff for the purpose of fostering economic growth in the State and would be considered a strong participant in the proposed work. Finally, the recent expansion of Battelle Memorial Institute as manager of the Hanford Laboratories greatly increases the industrial research potential of the area. As a nonprofit organization, this laboratory would come under the purview of the bill as a qualified participant.

Now I might conclude by coming to a point that was brought out in my written testimony. Our industry in the State of Washington is quite diverse. It ranges from aerospace and nuclear energy, all of the way down to wood products and stone and clay products. And this range also embraces quite a range in technical capability. What we are seeking with this bill, seems to be, to me, technological advancement on a rather broad scale. Also what we seem to be offering is technical aid on a rather broad scale. The utilization of this technical aid at the plant level depends upon resident technical capability, or what we call technical self-sufficiency, in order to emphasize that this is something that must take place at the plant level, rather than at the university.

No matter how we distribute technical aid or what methods are emphasized, the degree of success will depend upon this factor of resident technical capability. Therefore, it seems to me in order to achieve any permanent gains toward technological advances, we should address some effort to the problem of increasing this capability. This, of course, is largely an educational effort. It begins with management attitudes toward new technology and perhaps ends with the employment of one or more technical people.

Now this is not intended as a criticism of the bill. The desired effect, I believe, can be achieved quite easily within the framework of the bill. It is merely a suggestion that perhaps some of this effort on extension can be directed toward management itself in modifying their attitude toward research and new technical information. Educational institutions, I believe, are well geared to do this job, and I don't believe we will have any trouble accomplishing this under this bill. Thank you.

Senator NEUBERGER. I appreciate your succinct remarks and specific comments. One of the things that I hope to ascertain from our witnesses is precisely how this bill will apply. Your State is com-

parable to mine in some ways. I was trying to find out how we would use it in the wood industry and fishing industry. And I notice in your statement you mentioned the fish industry.

Mr. MARRA. That was a fish story that perhaps should be deleted from the testimony. It has been partially discredited by competent fishermen on the basis that more fish in the water will enable the better fishermen, at least, to increase their catch.

Senator NEUBERGER. I looked through it briefly, and I said to myself, why do they have to be told what kind of reels to get and so on.

Mr. MARRA. That was intended as an analogy, Madam Chairman, and apparently the analogy doesn't fit too well.

Senator NEUBERGER. I see. Well, the material you have given us, especially on pages 11 and 12, is very valuable. You seem to have quite a program underway at Pullman. Then how would this bill help you? Would it improve it by providing additional matching funds?

Mr. MARRA. Yes. We would simply, I think, expand our present program into areas not now being covered, which we consider to be essential to our industry.

Senator NEUBERGER. Thank you very much.

We will hear Dr. Chris Barthel, Jr., executive director of the Research Foundation of Kansas.

**STATEMENT OF DR. CHRIS E. BARTHEL, JR., EXECUTIVE DIRECTOR,
RESEARCH FOUNDATION OF KANSAS, TOPEKA, KANS.**

Senator NEUBERGER. Dr. Barthel, Senator Pearson from your State is a member of this committee, but he is out of town today, so he asked me to express his regrets that he couldn't be here to introduce you.

He has also told members of the committee of your field of experience and your qualifications, so we know about you and we welcome you here.

Dr. BARTHEL. Thank you very much, Madam Chairman. In accordance with your instructions, or the instructions of your committee, I have prepared a fairly lengthy statement for the record, and I will summarize that statement very briefly at this time.

The profitable utilization of the results of research, or any other knowledge for that matter, by industry or by any other institution, is not a simple process. Rather, a number of different types of activities are involved, activities requiring the contributions of different types of specialization for successful accomplishment.

It is my strong conviction that real and rapid progress would be made in the utilization of knowledge for economic and social gain only by consideration of the total system of activities involved instead of individual components of a system.

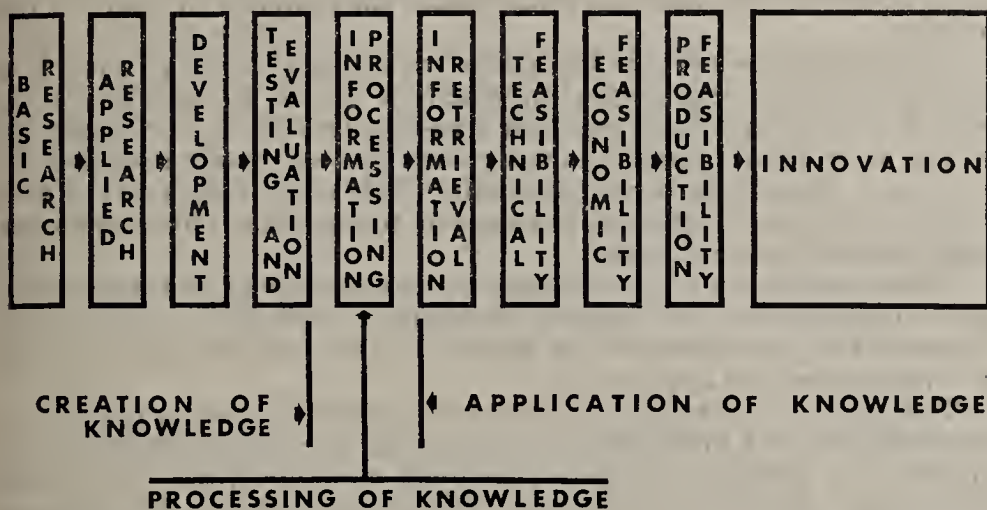
In my prepared statement I proposed for your consideration a research economic development system in a manner of the giant weapon systems of the Department of Defense.

In order to conserve time, Madam Chairman, I have prepared a chart showing different types of activities involved in this suggested research economic development system and I request that copies of this be made a part of the record.

Senator NEUBERGER. All right. We will be glad to include them in the record.

(The chart referred to follows:)

RESEARCH-ECONOMIC DEVELOPMENT SYSTEM



Dr. BARTHEL. I want to stress there are certainly no short boundaries between the different types of activities shown on this little chart, and that other persons would probably list the different activities in different ways. I am sure, however, that most persons concerned with the process of technology application would agree, though, that the activities can be grouped into three major categories shown on the chart.

No. 1, those involved in the creation of information; No. 2, those involved in the processing and dissemination of the information; and No. 3, those involved in the retrieval and utilization of the information for industrial, economic or social purposes.

Now, I believe a brief overview of the status of these three categories of activities is pertinent to the consideration of this State Technical Services Act of 1965. During the past quarter century, our Nation has developed an unprecedented capability for the production of specialized information through research, development, testing, and evaluation. The increasing expenditures for these activities at present in excess of \$20 billion a year in the United States alone have introduced vast quantities of new information in our storehouse of knowledge. We have today a research and development industry, one of the larger ones of our country, staffed by specialists highly skilled in the process of creating new, and refining existing, information. And these specialists continue to produce fascinating and potentially useful knowledge at an increasing rate.

Now, this research explosion has fused another explosion—an information explosion. Today between 1 and 2 million papers are being presented each year in about 35,000 scientific journals and technological journals throughout the world. The sheer quantity of papers forced the introduction of abstracting or summary services for the

scientific or technological literature. The first abstract journal appeared in 1930, at the time when there were about 300 scientific journals; today there are 300 abstract journals alone.

Another problem existing, with respect to the scientific and technological literature: The reports are presented in the specialized language of the investigator, and few people outside of the immediate field of the investigator can comprehend the material in many of the reports.

Still another severe problem exists with respect to great quantities of scientific and technological information—much of the information was developed by a basic research investigator with no application in mind, or by other types of investigators to meet certain specified objectives. There is in such information little or no indication of possible application for general purposes or for specified objectives other than the original objectives.

Thus, there exists in the scientific and technological literature today great quantities of information potentially valuable to our society, information just waiting to be picked up and used, but much of it is not earmarked for application.

That part of our research-economic development system relating to the utilization of knowledge, the actual production of new or better products or services, is highly developed for defined specialized and adequately supported objectives. The almost unbelievable achievements in nuclear engineering and space science and technology are excellent examples of the capability of our Nation in the application of science and technology to specific objectives.

On the other hand, this capability is still in experimental and exploratory stages, as far as application for general industrial, economic, or social purposes is concerned. Deficiencies in the utilization of specialized knowledge for general purposes has been widely recognized for only a year or two. The proposed legislation which we are considering today is directed toward the correction of this deficiency.

It must be emphasized that present processes and institutions are not adequate for relating existing information to the solution of current or future problems of industry or other institutions which do not have scientific and technological support activities. Thousands of industries and other institutions have no way of knowing that information exists which could benefit them, of relating such information to their needs, and of converting the information to profitable use or knowing where to turn for assistance in accomplishing the conversion.

In my opinion, the proposed legislation, designed "to promote economic growth by supporting State and regional centers to place the findings of science usefully in the hands of American enterprise" is an important and necessary next step in the evolution of the science and technology of our Nation.

The legislation would foster and stimulate the flow of information to State, regional, and local centers and would provide for services for relating information to specific problems and needs and for recommending expertise for solving the problems and meeting the needs. The legislation would attempt to step up the pace of putting an ever-expanding portion of the science and technology of the world to work for our country, for our States, regions, and localities, and for our people. I am convinced that the legislation, if approved, could have

far-reaching implications for education, for science and technology, and for economic and social progress.

One, the Nation, including the States, regions, and local communities, must give substantially increased attention to the flow and utilization of the results of the vast research and development programs of the United States and of the world if full benefit of these programs are to be enjoyed. The proposed legislation would foster such increased attention.

Two, the steady reduction in farm employment and the leveling off of employment in the manufacturing industries, as well as the rapid growth of the population itself, demand the continued stepup of the economy. The proposed legislation would stimulate such stepups of the economy through technology application.

Three, a more balanced system of activities will result in improved education and research, at all levels, and in all types of institutions. The proposed legislation would provide for a more balanced system of activities through the strengthening of the information process and the utilization process, the parts of our system in need of strengthening.

I am convinced, Madam Chairman, that my own State of Kansas would benefit substantially from the proposed State Technical Services Act of 1965, and that other States would similarly benefit. In fact, as a Nation, we cannot afford a delay in the strengthening of the processes of general technology application. Thus, I strongly recommend support of the proposed legislation.

In closing, I should like to emphasize that the processing of knowledge and the utilization of knowledge are not the same processes as the creation of knowledge. We have a high order of competency in the creation of knowledge, but bold new concepts will be necessary to translate highly sophisticated scientific and technological information into practical, down-to-earth uses.

Bold new pioneers are necessary for general technology application, pioneers with creative ability and competency of a high order. Provided that adequate institutions and alert innovation exist, these pioneers could assist in building great new economic empires to benefit our beloved Nation and its people.

(Dr. Barthel's fully prepared statement follows:)

PROPOSED STATE TECHNICAL SERVICES ACT OF 1965

(Senate Bill No. 949)

TESTIMONY OF CHRISTOPHER E. BARTHEL, JR., EXECUTIVE DIRECTOR,
RESEARCH FOUNDATION OF KANSAS

Mr. Chairman and members of the committee, I appreciate the opportunity to participate in the deliberations of this distinguished committee on Senate bill 949, the State Technical Services Act of 1965. I sincerely hope that I can contribute in a constructive way to these deliberations.

In my opinion, the proposed legislation, designed "to promote economic growth by supporting State and regional centers to place the findings of science usefully in the hands of American enterprise" is an important and necessary next step in the evolution of the science and technology of our Nation. This step would attempt to step up the pace of putting an ever-expanding portion of the science and technology of the world to work for our country, for our States, regions, and localities, and for our people. I am convinced that the legislation, if approved, could have far-reaching implications for education, for science and technology, and for economic and social progress.

In order to examine the proposed legislation in its proper perspective, for the Nation and for our States, regions, and localities, I would like to propose for your consideration a research-economic development system of activities involved in the utilization of knowledge for industrial, economic, and social purposes. Then, I would like to assess, in a broad, general way, the status of these several diverse activities in the United States and in some of our States and localities. Next, I would like to relate the provisions of the proposed State Technical Services Act to the activities of the research-economic development system, hopefully to show how the proposed program would generally strengthen the total system. Finally, I would like to provide my own personal comments and recommendations on the proposed legislation.

A RESEARCH-ECONOMIC DEVELOPMENT SYSTEM

The profitable utilization of the results of research by industry or by any other institution is not a simple process. Rather, a number of different types of activities are involved, activities requiring the contributions of different types of specialization for successful accomplishment. Because our society has evolved as a number of specialized and compartmentalized social activities—education, research, religion, law, politics, industry, finance, etc.—the activities involved in the utilization of research results have to date been viewed by different groups as distinct activities rather than components of a system of activities. Further, efficient methods of communication between the different specializations are yet to be perfected. It is my strong conviction that real and rapid progress will be made in the utilization of knowledge for economic and social gain only by consideration of the total system of activities instead of the individual components of such a system. I propose for your consideration, therefore, a research-economic development system of the manner of the giant weapon systems of the Department of Defense, systems which have been treated so effectively by that Department through new types of systems analysis and operations research processes.

Types of activities

Different persons would probably list the different types of activities involved in the research-economic development system in different ways. One listing could include the following steps:

Basic research.—This step involves the creation of knowledge. Over the years, basic research has become a traditional responsibility of our universities. A relatively small number of other types of postdoctoral research institutions also contributes to sophisticated basic research. Primarily through the stimulation of the National Science Foundation, basic research has grown rapidly during the past decade and a half, and today constitutes about 10 percent of the Nation's total effort in research.

Applied research.—This step involves the application of knowledge to the creation of new concepts for specific purposes. In addition to the universities proper and postdoctoral research institutions, many other types of organizations conduct applied research—university research institutes and foundations, university experiment stations, private research institutes and foundations of both the profit and nonprofit type, industrial associations, industrial research laboratories and centers, and new types of science-based companies. Such directed research received tremendous emphasis during World War II and has had an explosive growth during postwar years, particularly since the mid-1950's.

Development.—Development involves the design and fabrication of models of systems, instruments, processes, materials, etc., out of applied research. In general, only a limited amount of developmental activities is carried out in the universities and postdoctoral research establishment.¹ The greater part of such work is conducted in the other types of institutions which conduct applied research.

Technical testing and evaluation.—This step involves the proof of general technological feasibility of models evolving from the development process. Very little technical testing and evaluation is conducted in the universities and postdoctoral research establishments, except in support of basic research. The greater amount is conducted in the same types of institutions which conduct

¹ Agriculture in the land-grant colleges and universities is a notable exception. Agriculture is excluded from this discussion, both for this reason and because it is not covered by the State Technical Services Act of 1965.

developmental activities; to these might be added, however, new types of operations research and systems engineering establishments and sophisticated testing laboratories.

Technical information processing and dissemination.—The end items of the above steps are scientific or technological reports. These reports are, for the most part, in the language of the specialists who produced them. This step involves the development of processes for making the material known and available to possible users. The step includes such things as the preparation of digests and abstracts in nonspecialized language, the publication of such digests and abstracts in cumulative indexes, and the development of complex storage systems for such information. Most research and research-related activities recognize the importance of the information process, most of such organizations possess limited quantities of research and research-related reports in specialized form, but very few carry the information beyond the specialized form except for their own specific purposes.

Technical information retrieval.—This step, the first in the process of the utilization of information, involves the location by some interested party of potentially useful information. This process includes old-fashioned literature searches and, more recently, the location of information through complex electronic retrieval systems.

Technical feasibility.—This step involves the relating of a piece of information to a possible industrial, economic, or social use, and the proof of technical feasibility for this specific use. A number of Federal agencies and large, sophisticated industries have done outstanding jobs in technical feasibility studies to meet their own specific objectives. Examples are, of course, the National Aeronautics and Space Administration, the Atomic Energy Commission, the National Institutes of Health, and the industrial giants.

Economic feasibility.—This step involves the proof of broad economic feasibility of models of devices, products, systems, materials, or processes surviving the technical feasibility process. It includes cost evaluation, market studies, consumer acceptance studies, etc.

Production feasibility.—This step involves the evaluation of the production potential by a given enterprise of those items which survive the economic feasibility evaluation. In the industrial process, the step involves the determination of whether or not a given product or service can be produced by a given enterprise at a cost to permit a reasonable profit.

Innovation.—This step is the end item of the entire system of activities—the actual production of a product or service by a given enterprise. It involves a whole realm of activities of a planning, organizational, and implementation nature, and requires a singular type of leadership for pulling these diverse activities together into a fruitful operation.

Discussion of activities of system

The system can be logically broken down into three parts—the first relating to those activities involved in the creation of information; the second to the processing and dissemination of the information; and the third to the retrieval and application of this information for industrial, economic, or social purposes.

During the past quarter century, our Nation has developed an unprecedented capability for the production of specialized information through research, development, testing, and evaluation. The increasing expenditures for these types of activities by the United States, at present in excess of \$20 billion per year, has introduced vast quantities of new information into our storehouses of knowledge—exciting advances in traditional areas such as medicine and pharmaceuticals, transportation, communications, food processing and distribution, to mention a few; entirely new disciplines almost undreamed of a few decades ago—nuclear engineering, space science and technology, electronic data processing, automation and electronic controls, as examples. We have today a research and development industry, one of the larger ones of our country, staffed by specialists highly skilled in the process of creating new, and refining existing, information.

This research explosion of the past quarter century has fused another explosion—an information explosion. For example, scientific journals have been increasing in geometric progression. The 10 scientific journals of 1750 increased to about 100 in 1800 and to more than 10,000 by 1900. Today, between 1 and 2 million papers are being presented each year in about 35,000 scientific journals throughout the world. The sheer quantity of papers forced the introduction of abstracting or summary services. The first abstract journal appeared in 1850,

at a time when there were about 300 scientific journals; today there are 300 abstract journals alone.

Another severe problem has always existed, and still exists today, with respect to the scientific and technological literature—the reports are presented in the specialized language of the investigator, and few people outside of the immediate field of the investigator can comprehend the material in many, many of the reports. In his testimony before the Select Committee on Government Research of the U.S. House of Representatives on January 22, 1964, Dr. Edward Teller summarized this problem succinctly as follows:

“Our universities train excellent specialists, mathematicians, physicists, chemists, but the chemist doesn’t understand the mathematician. The mathematician doesn’t understand the physicist, and sometimes I believe the physicist doesn’t understand anybody.”²

Still another severe problem exists with respect to great quantities of the scientific and technological information in the storehouses of knowledge—much of the information was developed by a basic research investigator with no application in mind, or by other types of investigators to meet certain specified objectives. There is in such information little or no indication of possible application for general purposes or for specified objectives other than the original objectives.

Thus, there exists in the scientific and technological literature today vast quantities of information potentially valuable to researchers, to individuals, to industry, to the economy, to our society—information just waiting to be picked up and used, but much of it not earmarked for application.

The translation of technical information from a specialized form to a form more readily understood by potential users is a problem which has been receiving significant attention only during the past few years. As late as 1963 and the early part of 1964, such attention was being provided by such groups as the President’s Science Advisory Committee of the Executive Branch of the Federal Government, and by congressional bodies; and I am sure these same bodies are still deeply concerned about the information process. Technical information processing and dissemination has not yet fully evolved as a professional specialization staffed by career specialists, and persons conducting such activities are, for the most part, recruited from other areas of human affairs. It can be safely concluded, I believe, that the competency of our society in the technical information process, the second part of our research-economic development system, does not yet parallel its competency for producing specialized information.

I would be grossly remiss if I did not pause to commend the present Federal Government programs in the scientific and technological information areas. Several should be pointed out, but I shall mention only the programs of the Office of Technical Resources and the Clearinghouse for Federal Scientific and Technological Information, both of the National Bureau of Standards, U.S. Department of Commerce, because of their basic interplay with the activities proposed by the State Technical Services Act. Today, these two groups are receiving, analyzing, selecting, summarizing, and abstracting in proper language, and disseminating the unclassified research, development, testing, and evaluation reports generated by the vast Federal research and development programs at the rate of 65,000 reports per year. These two organizations are developing new types of mechanisms for calling these reports to the attention of potential users and are making the reports themselves available to interested persons or institutions at a nominal cost. In addition, the Office of Technical Resources, after careful analyses by Bureau of Standards specialists, is selecting those reports with major industrial implication and referring them to the Clearinghouse, which prepares abstracts and disseminates these abstracts under a “Fast Announcement Service” to place the material in the hands of potential users as early as possible. These services, less than 1 year old, are already being widely recognized as vital links in the information processing system, and an important contribution to the ultimate utilization of research and development results.

The third part of our research-economic development system, that relating to the application and utilization of knowledge, is highly developed for limited defined specialized objectives. The almost unbelievable achievements in nuclear engineering and space science and technology are excellent examples of the

² Select Committee on Government Research, U.S. House of Representatives, 88th Cong. Hearings on “Federal Research and Development Programs,” pt. 2, p. 942. Washington, U.S. Government Printing Office, 1964.

capability of our Nation in science and technology application for specific objectives.

On the other hand, this capability is still in prenatal stages as far as application for general industrial, economic, or social purposes is concerned. Present processes and institutions are not adequate for broad, general application of science and technology, for relating existing information to the solution of current or future problems of industry or other social institutions which do not have sophisticated scientific and technological support activities. Deficiencies in the utilization of specialized knowledge for general purposes has been widely recognized for only a year or two. The National Aeronautics and Space Administration, is, at this very moment, deeply concerned with pioneering programs to induce the flow of specialized information produced under its programs into the Nation's economy, and in January 1965, the Atomic Energy Commission announced a new program with the same objectives for the information produced through its programs. And, of course, the proposed legislation which we are considering today is directed toward the correction of this deficiency.

To summarize and to repeat for emphasis, the present status of knowledge of the research-economic development system is indeed remarkable. The heavy investment of our Nation in research, development, testing, and evaluation has produced vast quantities of specialized information immediately available to mankind for use for many diverse purposes. The information was produced, however, to meet specific objectives, and today there is general recognition of extreme imbalance in the total program, imbalance both with respect to subject matter and geographical competency for carrying on sophisticated activities. Increasing attention is being given to the information processing and dissemination stages of the system, but little is known about the processes involved in the transfer of specialized knowledge into the general civilian economy. Since it is recognized that economic growth is a responsibility of the States, regions, and local areas, many States, regions, and localities are embarking upon new concepts for the flow of information into the economy.

Status of system at the State level

The status of the activities of the research-economic development system varies greatly from State to State. All States are engaged, in some way or another, in the creation of new knowledge through research, development, testing, and evaluation; the nature, extent, and degree of sophistication of such activities vary tremendously. Stimulated by grants and contracts of Federal agencies, these types of activities are being strengthened in most States, regions, and localities, but, again, in varying degrees.

Turning to the information processing part of the system, vast quantities of research and development reports in specialized form are immediately available to anyone who wants them. Large, well-supported industrial groups and other institutions in the different States are receiving, analyzing, translating, and disseminating selected information to meet their own requirements. These information services are, for the most part, not available for general social and economic purposes by other organizations, public or private. Indeed, thousands of industries, State agencies, and other institutions do not know that such specialized knowledge exists and, if they do, have no facilities or competence for identifying pertinent information and for processing and translating this information to meet their specific requirements. Very few but a growing number of States are today gearing themselves to receive existing information services of the Federal Government and other professional operations and to adapt the information to the needs of their intermediate-sized and smaller industries, State agencies, and other institutions.

Stimulated by two annual national conferences on State science and technology sponsored by the Department of Commerce, some 28 States are now seriously engaged in planning for the strengthening of their activities in the application part of the research-economic development system. These activities include vital planning, information retrieval and translation, and industrial demonstration and extension patterned in a broad way after the agricultural extension services which have served our country so well. It is stressed that these activities are pioneering in nature, for the most part exploratory and experimental. There is no accepted pattern for a State program of technology application. In fact, at a conference of university-industry program directors here in Washington on March 8-9 and again at the Second Annual National Conference on State Science and Technology on May 10-11, there was general agreement that the technical

services programs of the different States would likely vary considerably because of the needs and resources—natural, institutional, and human—of each individual State and that a model State program was not feasible.

SCOPE OF THE PROPOSED LEGISLATION

The proposed legislation has as its stated purpose the stimulation of a wider diffusion and more effective application of science and technology in industry through a "national program of incentives and support for the several States individually and in cooperation with each other in their establishing and maintaining State and regional technical service programs. * * *"

In the legislation technical services are defined as "activities or programs designed to enable businesses and industries to acquire and use scientific and engineering information more effectively through such means as:

"(1) Analyzing problems of regions and industries to determine new opportunities for applying technology.

"(2) Preparing and dismantling technical reports, abstracts, computer tapes, microfilm, reviews, and similar scientific or engineering information, including the establishment of State or regional technical information centers for this purpose.

"(3) Providing a reference service to identify sources of engineering and other scientific expertise.

"(4) Sponsoring industrial workshops, seminars, training programs, extension courses, demonstrations, and field visits designed to encourage the more effective application of scientific and engineering information."

The legislation thus covers the technical information processing and dissemination components and some of the components of the application part of our research-economic development system. It should be stressed that the legislation does not cover research or that part of the system concerned with the creation of knowledge, nor does it cover the actual process of innovation. Rather, it is intended to strengthen those activities relating to the analysis, selection, and dissemination of potentially useful information and the placing of this information in the hands of some identified institution or person who could put it to profitable use. It would strengthen the institutions and processes of the States, regions, and localities for handling and applying information that already exists—including information already selected and processed by the Federal programs but which requires local analysis, processing, and referral to local enterprises and establishments in order to benefit the States, regions, and localities. It should be mentioned that, for the most part, the cost of adapting the information to local uses would, in general, be a very small part of the total cost of creating the information in the first place.

PERSONAL EVALUATION OF PROPOSED LEGISLATION

For several years, I have personally followed the activities of the U.S. Department of Commerce directed toward the development of an adequate program to stimulate the transfer of research results to the civilian economy. Some of the proposals of the Department have received opposition from a number of areas, and I am sure that the State Technical Services Act of 1965 has received similar criticism. In fact, I have personally heard some of these criticisms:

The proposed legislation is another attempt at Federal intervention in local and private affairs.

The proposed legislation provides Federal funds for activities which are strictly State and local business.

The proposed legislation provides for services which are being carried out efficiently and effectively by large, progressive industries; these industries have no need for such services.

The proposed legislation would support questionable industries which probably do not have the type of leadership necessary for successful growth.

The proposed legislation provides for certain activities which would be in conflict with and interfere with the normal functions of research establishments, management and engineering consultants, and the like.

I am sure, gentlemen, that you have heard all of these criticisms—and many more.

On the other hand, for strictly logical reasons the proposed legislation has fundamental merit.

1. *The Nation, including the States, regions, and local communities, must give substantially increased attention to the flow and utilization of the results of the vast research and development programs of the United States and of the world.*—The great investment in research has produced results which could be of immense value to our society. The proposed legislation would attempt to stimulate activities to balance the research-economic development system, to feed the results of research and development into the society.

There can be but little argument about the imbalance of the research-economic development system. It has been widely recognized that many companies in the United States have failed because they have not used knowledge that is readily available. The proposed program would, hopefully, stimulate the use of such knowledge.

The Federal Government is now making available to the States, regions, and localities, as well as to private enterprise itself, information of great industrial implication. Positive mechanisms must be established if such information from the Federal research programs are to be assimilated at the State and local levels.

As the various States, regions, and localities learn more about the Federal programs, these geographical and political entities will be able to assist the Federal Government in planning its activities in support of the total economic growth of the Nation—including the growth of the States, regions, and localities.

2. *The steady reduction in farm employment and the leveling off of employment in the manufacturing industries, as well as the rapid growth of the population itself, demands the continued step-up of the economy.*—During recent years, great strides have been made in the creation of sophisticated service industries which are based upon complex new knowledge. In fact, the rapid introduction of new technology into industry is stepping up the rate of obsolescence of most industries. Thus, the security of existing industries, as well as the creation of new industries, requires the more rapid and more effective transfer of knowledge into practical uses.

3. *A more balanced research-economic development system in the United States will result in improved education and research, at all levels and in all institutions.*—The universities will benefit from the flow of up-to-date knowledge into their education and research programs, the updating of their faculties, and a stronger interplay with industry and governmental agencies. The colleges will benefit in the same way, permitting them to train better students for advanced study and better teachers for the high schools and elementary schools. The junior colleges will benefit from the immediate availability of new knowledge, a stronger faculty, better trained students, and updated curriculums. The vocational schools will benefit through modern, up-to-date information to assist in the selection of areas of vocational study, the improvement of curriculums, and the updating of teachers.

Turning to the criticisms of the proposed legislation listed above, the following comments are provided in rebuttal:

The Federal Government has subsidized, to a major degree, research and development in the United States. The activities covered by the proposed legislation are a logical extension of the research and development functions into information and application areas.

Significant funding will be required by the different States to plan for and carry out adequate information and utilization programs, and the matching fund basis which has proved so effective in the Federal-State partnership in the field of agriculture would go a long way in stepping up the rate of development of such programs.

Because of the high and rising costs of research and development and of sophisticated research-related services, many companies cannot afford services of a type covered by the proposed legislation. These services could stimulate the growth of small, well-managed companies, as well as provide supplementary services to larger companies, even the largest.

The services proposed in the legislation should increase rather than decrease the clientele of research laboratories, management and engineering consultants, and the like, by assisting in the identification of problems and the location of competence for the solution of the problems. The increased clientele should result in two ways: more direct referrals to the research laboratories, management and engineering consultants, and the like, and the extension of information on the capabilities and possible contributions of such organizations.

CONCLUSIONS

In conclusion, gentlemen, after carefully scrutinizing the proposed legislation and weighing assets against deficits, I am convinced that my own State of Kansas would benefit substantially from the proposed State Technical Services Act of 1965, and that other States would similarly benefit. I believe that the role of the Department of Commerce outlined in the legislation is a reasonable extension of Federal activities in the stimulation of science and technology in an area that needs immediate attention. In fact, as a nation we cannot afford a delay in the strengthening of the process of general technology application. Thus, I heartily endorse the proposed legislation.

In closing, I should like to emphasize that the processing of knowledge and the utilization of knowledge are not the same processes as the creation of knowledge. We have a high order of competency in the creation of knowledge, but bold new concepts will be necessary to translate highly sophisticated scientific and technological information into practical, down-to-earth uses. Bold new pioneers can build economic empires out of knowledge created during the past decade; these pioneers must be persons with creative ability and competency of a high order. Provided that adequate institutions and alert innovation exist, such empires could spring up anywhere to the benefit of our beloved Nation and its people.

Senator NEUBERGER. This is a very excellent report, Dr. Barthel. I really have no questions, since you have covered it so thoroughly.

Again, I like your specific references. I enjoyed your rebuttal of possible criticism of this program. I have a feeling that maybe some of that criticism is fading away, as nothing succeeds like success?

Dr. BARTHEL. Yes. These were criticisms, in my opinion, of the bill and not of the process, and I believe they are fading away. I hope they are.

Senator NEUBERGER. Are you familiar with the bill that was introduced by Senator Scott, which is similar to this?

Dr. BARTHEL. I heard of the bill this morning for the first time and I did manage to look through it briefly.

Senator NEUBERGER. I think there is no conflict in the objectives of the two bills, and Senator Scott would say "amen" to all of your comments here. Senator Scott's bill alters some terminology; one uses "agency" rather than "institution." The bill refers a great deal to the universities and places where this work is going on.

We will be considering both of them in the committee, and your testimony will be very useful to us—and it is very specific.

Thank you very much.

Senator NEUBERGER. The next witness is Mr. George W. Hubley, Director of the State of Maryland Department of Economic Development. Is Mr. Hubley here?

(No response.)

Senator NEUBERGER. Perhaps he will be here a little later. We will hear then from Mr. Jean Paul Mather, executive vice president, University City Science Center, Philadelphia, Pa.

STATEMENT OF JEAN PAUL MATHER, EXECUTIVE VICE PRESIDENT, UNIVERSITY CITY SCIENCE CENTER, PHILADELPHIA, PA.

Senator NEUBERGER. We welcome you, Mr. Mather. Is the University City Science Center private?

Mr. MATHER. I think I can describe it briefly in my presentation, Madam Chairman.

Senator NEUBERGER. All right.

Mr. MATHER. I am filing this brief representing the science center and its wholly owned subsidiary corporation, the Science Research Institute, in support of the Technical Services Act of 1965.

The two organizations for which I serve as chief administrative officer are engaged in a long-range program for speeding up the timing and the quantity of transfer of technology between basic research discoveries or breakthroughs and their application in goods and services useful to our evolving economy. The University City Science Center is a nonprofit corporation composed of a consortium of universities, colleges, medical schools, and hospitals in Philadelphia and within a 90-mile radius of the center of the city. These nonprofit institutions have capitalized through stock subscriptions the nonprofit corporation known as the University City Science Center. This mechanism for raising local and regional seed money is possible in Pennsylvania under a State statute which allows nonprofit institutions to sell stock. They cannot declare dividends, but they can sell stock. Within the University City Science Center Corp. is a wholly owned subsidiary, the Science Research Institute, which can be used for rounding up both consulting and full-time staff from the member institutions to perform sponsored projects in the area of applied research and development. The University City Science Center Corp. will be the promotional, monitoring, and management institution. Designated by the Urban Redevelopment Authority as the redeveloper, this corporation will establish facilities and operations within a 26-acre urban tract adjacent to the University of Pennsylvania and Drexel Institute campuses in West Philadelphia.

The concept involves resident R. & D. facilities established by individual corporations through sale, lease, or lease-purchase of facilities. Other research institutes in a variety of disciplines should also be attracted to the center to carry on problem-oriented sponsored research for industry or government. Within the complex it is further planned to establish a Conference and Continuing Education Center to facilitate the handling of colloquia, seminars, and institutes for the training and "retreading" of scientists and engineers, for location of offices of professional societies, and for a meeting place for the catalytic exchange of ideas.

Comparable to the regional philosophy of the Technical Services Act of 1965, the Science Center concept in Philadelphia is a regional one involving a variety and number of basic research institutions and the problem-oriented industry and commerce of the entire Delaware Valley and Middle Atlantic States. This is an urban project, operating under a program of urban redevelopment as a means of bolstering the economy, developing new ideas and products, and providing new jobs in the science-directed industries of the future.

The officers and directors of the University City Science Center are vitally interested in the passage of the Technical Services Act of 1965. The interest stems from a close parallel between the act and our own objectives. Our program, instituted after over 3 years of careful planning and economic analysis, represents a locally organized vehicle for accomplishing a speedup in the transfer of technology in many of the precise ways and by the same means spelled out in the act.

If the Technical Services Act when passed, were administered from the Governor's office or through the department of commerce under

the Governor's office, the State of Pennsylvania has already available many of the mechanisms to be involved. The Governor's council of science and technology could very well serve as the advisory council described in section 10 of S. 949. Land grant and other institutions in the western sector of the State are ready and able to efficiently allocate resources in that area. And the Science Center in Philadelphia can serve as it already is serving to extend, diversify, and increase the services required in the Middle Atlantic megalopolis of which Philadelphia is a major part.

It is our firm belief that the objectives of this act represent a consistent approach to a joint Federal, State and local effort to improve and increase the transfer of science and engineering technology. With knowledge exploding as it is throughout the world, the United States has a vital stake in such an effort. If we are to maintain economic growth and progress in competition with the increasing R. & D. accomplishments of the Common Market countries, the Japanese and the Soviets, we will need to speed the development and use of our own knowledge industry with every conceivable means at hand.

Senator NEUBERGER. Mr. Mather, do you personally work with any of this? Are you an executive director?

Mr. MATHER. I am the chief administrative officer of both organizations, as we now begin our work. In other words, I am making the direct contacts with industry at this point. So that I have just started to employ my staff, within the Science Center. But I have established in each of the now 14 institutions who own stock a consulting committee of people who are interested in this transfer concept, and who will help serve as a screening committee, as we begin to come up with projects.

The direct answer to your question is that we have already landed one major research contract with a national pharmaceutical concern, and we are starting our first building this last week, for a million and a half dollars, some 90,000 square feet, of which 60 percent of it is rented by four major research contracts, before we begin the building.

Senator NEUBERGER. You referred to the increasing association with the Common Market, the Japanese and the Soviets. Would your industries probably be interested in conversion to the metric system, as an aid for our international trade?

Mr. MATHER. This might improve communications. But I am more concerned, however, with the fact that the Common Market people and the Japanese, the Japanese in particular, are allocating without reservation, as you know, considerable sums of money and human resources to this R. & D. effort, and they have been very successful since 1946 in turning out quality products that are highly competitive with ours. And I believe that a lot of small and middle-sized and large industry has to awaken to this R. & D. catalytic action to keep in the competitive market.

I spent the 4 years before I came to Philadelphia in November organizing an industrial research park at Purdue, where a big mid-western engineering institution is involved in this same process of trying to provide, if you will, industrial extension, to bring corporations into the purview and into the geographic neighborhood of a big institution and then bring the brains together. The same problems are inherent there. The Midwest has done a lot of crying about Federal

R. & D. fund allocations, but I think they would do a lot better if they organized their resources and got the industry into the R. & D. business, with their capabilities, and got on with the job.

Senator NEUBERGER. Thank you very much for your comments, Mr. Mather.

We will next hear from Mr. Waldo W. Wegner, Director of the Center for Industrial Research and Services, Iowa State University.

STATEMENT OF WALDO W. WEGNER, DIRECTOR, CENTER FOR INDUSTRIAL RESEARCH AND SERVICES, IOWA STATE UNIVERSITY, AMES, IOWA

Mr. WEGNER. Madam Chairman, you have a full statement, which I would appreciate having go into the record, and you also have an abstract.

Senator NEUBERGER. It will be placed in the record, yes.

Mr. WEGNER. The State of Iowa is this month completing its second year of operating the Center for Industrial Research and Service—CIRAS—Iowa's service organization for industry. CIRAS is administered through Iowa State University, Ames, Iowa.

I would like to present to you today a brief rundown on the operation and accomplishments of the past 2 years by this new organization. I would also like to indicate to you how I believe the Technical Services Act of 1965 will be of assistance to the Iowa program and the Federal program in other States of the United States.

The problems of industrial growth require solutions using engineering and scientific technologies. This is obvious from the fact that almost daily some segment of industry, corporation or individual, makes inquiry at the university for technical assistance and guidance. In the past, or more specifically in Iowa, prior to the establishment of CIRAS, such inquiries usually had been only superficially answered. This situation highlighted the need for technical assistance to industry.

CIRAS counsels with industry on special problems, advises regarding appropriate procedures for product development marketing, and production, and conducts research and testing programs when necessary. In addition, CIRAS provides technical and managerial information through publications and conferences specially oriented for industrial use. The counseling services are without charge, although research or special projects would be paid for by the interested industry, depending on the need and the industrial potential for the State. In general, funds for the center are provided from State appropriations.

This type of program was approved by the Iowa State Legislature in 1963 and they appropriated \$250,000 as a general line in the budget of Iowa State University for the operation of CIRAS for a 2-year period.

It was my privilege and good fortune to be offered the position of the director of this new program. I took over these duties in October 1963.

The Iowa State University administration did not, nor did the dean of engineering, or the four engineering staff members who had done the initial study and planning, hand me a format with the order that here was my organization chart—do something with it. They

welcomed me to the campus, indicated that I must operate under the administrative rules of the university, and that my main job would be determined by the needs of the State of Iowa for service to industry. This type of freedom of operation was a major factor in getting the operation underway in a short period of time.

I believe that this type of flexibility is available in the Technical Services Act of 1965. And it is my opinion that it is one of the real necessities for satisfactory accomplishment of the purpose of the bill.

We had been in operation for no more than 2 weeks before a committee from the Consulting Engineers Council of Iowa visited the office.

I think at this point I should point out that I am a graduate engineer and a registered professional engineer in the States of Iowa and Minnesota. I have been active in the Iowa Engineering Society and the National Society of Professional Engineers for many years, and have served as president of the Iowa Engineering Society and vice president for the north-central region of National Society of Professional Engineers. I am also a member of the American Society of Civil Engineers.

The Consulting Engineers Council of Iowa had previously indicated serious misgivings and concern about the establishment of such an operation as CIRAS at Iowa State. It is my understanding that this objection originated in the national offices of the CEC. I welcomed the opportunity to discuss the program with this committee and offered to appear on a panel discussion of the program of CIRAS at the annual meeting of their State association. This panel discussion included a consulting engineer, the director of the Iowa Development Commission, an industrialist and myself. The opportunity to discuss the program of CIRAS with this group of men was one of the most valuable public relations tools that a new organization could have been offered.

I was also given an opportunity to participate in the same type of program at the annual meeting of the Iowa Engineering Society, which is the State chapter of NSPE. Here I reached the many engineers who are not in consulting. This also gave the consultants who were members of the National Society of Professional Engineers an opportunity to check on whether or not I would tell the same story twice.

I am happy to say that I count the consulting engineers and the engineering profession as a whole to be the staunchest backers of the program which we have set up in Iowa. It is my belief that this group of people, the professional engineers and consulting engineers, stand to gain more than any other group outside of industry from the operation of CIRAS.

Problems to be solved and questions to be answered come to the CIRAS office either through personal contact, telephone call, or by correspondence. One or more members of the CIRAS staff review the problem presented to determine its scope and type—marketing, management, product development—and the length of time that they estimate it will take to solve the problem or find the answer.

If it is obvious that the problem will take more than 2 or 3 man-days of work, the staff automatically attempts to find a consultant, or a firm of consultants, that is in business in the State of Iowa and that has the capability and the experience to solve the problem. We attempt to give the names of at least two or three firms or individuals in each case, if we have this number on record.

If the firm or individual with the problem negotiates a contract with one of the firms or individuals referred to him by CIRAS, we then step out of the picture.

In order that we might do a good job for industry we felt that it was necessary to gather as much information as it was possible to put together and set it up on a retrieval type of system, so that it would be available when questions would be placed with CIRAS. Working toward this goal, we have a roster of the consulting engineers and consulting firms in the State of Iowa. In this information we have the data regarding a résumé of the principals of the firm, a list of the work done, capabilities, and the value of their projects. We also have a roster covering the education, qualifications, and the experience in production and research of the professors in all of the colleges at Iowa State. We are now in the process of planning how to gather this same information on the professors in the various private colleges in Iowa, as well as the other State-owned institutions of higher learning.

We have gathered similar facts on the certified public accountants, the patent attorneys, testing laboratories, advertising agencies, and architects. We will also tabulate information on other professions whom we expect to be using on the referral basis.

We are putting together a rather complete record of every industry in the State. This information includes all pertinent data which we believe may be of value in understanding the industrial capabilities, potential, and problems.

These data are being gathered by the four field representatives of CIRAS. Our total staff at this time, including the four field representatives, is nine men and two women.

Occasionally we find that we do not have a firm of consultants on record which has the capabilities and experience of handling the problem submitted to us. We then attempt to find a professor with the knowledge and background to do the job. Center for Industrial Research and Service cannot lose sight of the fact that the major responsibility of the State's institutions of higher education is to educate the youth of Iowa. We therefore make it a practice, in most cases, to contact the head of the department and check on the academic load of the professor or professors whom we wish to recommend to the Center for Industrial Research and Service client.

If we find that one professor is heavily loaded with academic work, we must then use only the name of the professor with comparable experience and a lesser academic load. When we do find a professor who is available for the consulting job, we try to get him together with the Center for Industrial Research and Service client and hope that they will negotiate a contract to their mutual benefit.

In all situations, it is the desire of Center for Industrial Research and Service to put those industries, or individuals, with problems, in touch with the firms or individuals who can solve their problems. We are definitely middlemen.

As a sounding board for checking results of past performance and planning for future activities, Center for Industrial Research and Service has organized an advisory council. This group consists of 21 men—12 of them come to the council from industry and of this 12, 2 of them are doubling in brass as representatives of industry and the Iowa Engineering Society.

Two representatives of the Consulting Engineers Council of Iowa and the remaining seven include a representative of the certified public accountants in Iowa, the Iowa Manufacturers Association, the Iowa Development Commission, the Des Moines Register & Tribune, and representatives, one from the State University of Iowa, the State College of Iowa, and Iowa State University, outside the college of engineering.

We favor the adoption of the Technical Services Act of 1965. If the act is passed, we anticipate the following benefits:

(1) It will enable us to more adequately cover an area of great concern to the Center for Industrial Research and Service staff and to industry, that of new product development, putting into practice some of the research and development of past and present years.

(2) It will allow us to work more closely with the engineering extension service to develop and schedule conferences which will benefit industry.

(3) It will aid us in working out a cooperative program with the other educational institutions in the State of Iowa.

(4) It will promote a closer tie and ultimate regional development between neighboring States.

(5) It will enable us to establish a much more personal distribution system for research and development information available currently through the Federal Government.

(6) This act will offer an incentive for establishment of industrial service centers in those States currently without such groups.

(7) Existence in all States of these groups will greatly facilitate the application of past, present, and future research development.

These are only a few of the obvious benefits which such a program would offer to the States. It could serve to aid in opening up a new channel of communication between industry, the Federal Government, and the individual States.

(Mr. Wegner's fully prepared statement follows:)

A REPORT ON THE CENTER FOR INDUSTRIAL RESEARCH AND SERVICE (CIRAS),
IOWA'S SERVICE ORGANIZATION FOR INDUSTRY

The need for technological aid and assistance to industry has existed in Iowa for sometime; however, it has become more evident in the last few years because of the growing industrialization of the State. Iowa has many and varied industries, but they have, in general, been sheltered by the broad umbrella of agriculture. In recent years, however, the umbrella seems to have been turned over. The total value of annual agricultural production in Iowa in 1964 was \$2,600 million, and this figure continues to grow each year.

The problems of growth in many cases, however, require solutions using engineering of scientific technologies.

Almost daily some segment of industry—corporation or individual—makes inquiry at the university for technical assistance and guidance. In the past, or more specifically, prior to the establishment of CIRAS, such inquiries usually had been only superficially answered, if at all. This fact highlighted the need for technical assistance to industry.

As these needs recognized and the pressure for some type of assistance increased, the question arose as to the role a university should play in helping solve these needs, particularly the role Iowa State University should play.

To aid in making the decision as to the nature and extent of this role, four engineering staff members visited some of the major research and development institutes, centers, parks, and industrial programs which seemed to be having an impact on industrial growth in their areas.

Those men studying the problem soon set out at least four basic technical assistance needs that existed:

- (1) Counseling, consultation, and guidance.
- (2) Specific problem solutions and aids.
- (3) Long-range research and planning.
- (4) Education and training.

It became evident to these men that a direct aid to industry program at Iowa State University would have to be conducted by a group devoted specifically to this purpose. They believed that the institutes and the research parks, which they visited, did not quite do the job that Iowa State University would have to do for the State of Iowa. The problem was then to set up an organization which could undertake a distinctly different role than had heretofore been attempted.

After the scope had thus been narrowed down by the committee, they proposed that the following program of university activities relating to industrial aid be initiated:

(1) The establishment of a center in the college of engineering for the specific purpose of helping industry directly with its problems. This center would consist of a core of full-time employees who would provide technical assistance and service to parties interested in the development of industry in the State.

(2) Qualified persons in engineering, science, business, economics, technical counseling, and research would be employed directly by the center and would be supplemented by other part-time staff on a consulting basis.

The functions of this group would be to counsel with industry on special problems, to advise regarding appropriate procedures for product development, marketing and production, and to conduct research and testing programs where necessary. In addition, the group would provide technical and managerial information through publications and conferences specially oriented for industrial use. The counseling services would be free, although research or special projects would be paid for by the interested industry, depending on the need and the industrial potential for the State. In general, funds for the center would be provided from State appropriations.

Through the cooperative efforts of university and industrial personnel, the proposal for the establishment of a center for a direct aid to industry was incorporated in the university's request to the State legislature in 1963. The legislature accepted the challenge and appropriated \$250,000 for the first 2 years for a program of engineering and technical assistance to Iowa's growing industry. The program was named the Center for Industrial Research and Service (CIRAS).

CIRAS opened its doors on July 1, 1963, with one employee. This man was a civil engineering graduate who temporarily was located in the dean of engineering's office. It was my privilege and good fortune to be offered the position of the first director of this new program. I took over these duties as the director on a part-time basis on September 16, 1963, and moved into the office, in which we are presently located, on October 1, 1963. At that time my office included three desks and four chairs.

The Iowa State University administration did not, nor did the dean of engineering and the four engineering staff members who had made the outline which I presented to you earlier, hand me a format with the order that here was my organization chart—do something with it. They welcomed me to the campus, indicated that I must operate under the administrative rules of the university and that my main job would be determined by the needs of the State of Iowa for service to industry. With this kind of confidence from the administration and the genuine support of the engineering college, CIRAS became active.

The CIRAS appropriation for the biennium, as indicated above, was set at \$250,000. The administration had, of necessity, rather arbitrarily set up a budget for the first year of \$100,000 and of \$150,000 for the second year.

We had been in operation for no more than 2 weeks when a committee from the Consulting Engineers Council of Iowa visited the office. They had previously indicated a serious misgiving and concern for the establishment of such an operation at Iowa State. It is my understanding that this objection originated in the national offices of the CEC. I welcomed the opportunity to discuss the program with this committee and offered to appear on a panel discussion of the program of CIRAS at the annual meeting of the State association of the consulting engineers. This panel discussion included a consulting engineer, the director of the Iowa Development Commission, an industrialist, and myself. The opportunity to discuss the program with this group of men was one of the most valuable public relation tools that a new organization could have been offered. I was also then given an opportunity to participate in the

same type of program at the annual meeting of the Iowa Engineering Society, which is the State chapter of the National Society of Professional Engineers, and reached the many engineers who are not consulting. This gave the consultants that were members of the National Society of Professional Engineers a check on whether or not I would tell the same story twice.

I am happy to say that I count the consulting engineers and the engineering profession as a whole to be the strongest backers of the program which we have set up in Iowa. I believe that as I discuss the operation of CIRAS you will understand why they have become boosters for the program. I understand that NSPE had indicated opposition to the original technical services bill but it is with a great deal of pleasure that I read to you the NSPE policy approved by the executive committee regarding engineering information dissemination programs.

"The National Society of Professional Engineers endorses legislation and other activities designed to stimulate and assist the dissemination of current engineering information to industry through State educational institutions and other sources at the State and local level.

Federal assistance to the States for this purpose will serve to stimulate the economy and the efficient use of engineering technology and will be to the benefit of the general public through higher levels of employment, improved standards of living, and more efficient production for a competitive position in world markets.

Legislation to accomplish this purpose would insure that the Federal Government, through its financial assistance should not support engineering research or provide services to proprietary interests. Engineering information gathered and disseminated under the program should be made available to the general public and industry on a broad and general basis. An advisory council, including representation from the engineering profession, and industry, should be established at each level of operation of the program to monitor it for policy guidance and general direction."

I would like to take the rest of my time with you today to discuss the relationship between CIRAS and industry, or a client, and then give you a brief report of the things that we are establishing in the office for the future handling of problems.

Problems to be solved and questions to be answered come to the CIRAS office either through personal contact, telephone call, or by correspondence. One or more members of the CIRAS staff review the problem presented to determine its scope and type (marketing, management, product development), and the length of time that they estimate it would take to solve the problem or find the answer. If it is obvious that it is a problem that will take more than 2 or 3 man-days to solve, the staff automatically attempts to find a consultant, or a firm of consultants, that is in business in the State of Iowa and has the ability and the experience to solve the problem. We attempt to give the names of at least two or three firms or individuals in each case if we have this number on record.

If the firm or individual with the problem negotiates a contract with one of the firms or individuals referred to him by CIRAS, we then step out of the picture.

Occasionally we find that we do not have a firm of consultants recorded which has the capabilities and experience of handling a problem submitted to us. We then attempt to find a professor with the knowledge and background to do the job. CIRAS cannot lose sight of the fact that the major responsibility of Iowa State University is to educate the youth of Iowa. We, therefore, make it a practice in most cases to contact the head of the department and check on the academic load of the professor or professors whom we wish to recommend to the CIRAS client. If we find that one professor is heavily loaded with academic work, we must then use only the name of the professor with comparable experience and a lesser academic load. When we do find the man that is available for this consulting job, we try to get him together with the CIRAS client and hope that they will negotiate a contract to the mutual benefit.

Occasionally we will have a situation where we are unable to find the talent in the State that is capable of giving the proper answer to the troubled industry or individual, we then, very grudgingly, go out of State on referrals.

In all situations, it is the desire of CIRAS to put those industries, or individuals, with problems in touch with the firms or individuals who can solve their problems.

In the situations just discussed, we have assumed that all industries, or individuals, who have come to CIRAS are able to pay for the services of a consultant. We do, however, have situations where small firms or individuals and some fairly good sized firms, are having financial difficulties, and find them-

selves unable to pay for the services of such a consultant. In these cases, CIRAS can serve in one or two ways:

1. We can utilize to the fullest extent the ability of our own staff.
2. We have a limited amount set up in our budget to retain specialists or professors as consultants to aid in areas where our staff is not adequate. In these situations the work is done without charge to the industry or the client.

This action is justified by the fact that employment is important to the local community, and the industry is important as a tax source to the State. Therefore, we believe that we are justified in attempting to keep this industry alive for Iowa.

One area of concern in our organization was that of duplicating the efforts of other State and Federal activities. We find that we are workign very closely with the Iowa Development Commission. One activity of IDC is the Iowa Development Commission Foundation (IDCF), Inc., which has been established to aid inventors within the State by helping them with patent search and patent applications, preparation of models and prototypes of inventions, and development and placement of these inventions into production. Quite naturally our efforts are bent toward assuring that these inventions will be manufactured within the State of Iowa.

CIRAS works very closely with this group and at the time that it is ready to take an invention to a manufacturer, it is almost mandatory that we make contacts with the industry through CIRAS representatives working together with men from the IDCF, Inc. The Iowa Development Commission Foundation, Inc., has relieved a great deal of pressure and time consuming effort from the staff of CIRAS.

Since July 1963, CIRAS has completely furnished its office and established office procedures for operation. One of the first items in our plan was to obtain for our files a complete roster of the consulting engineers and consulting firms in the State. This was done via the questionnaire route. We continue to gather data on these people including a résumé of the principals of the firms, a list of work done, capabilities, and the value of their projects. We also have a fairly complete roster covering the education, qualifications, and the experience in production and research of the professors in the College of Engineering at Iowa State University. We are now gathering this same information from the professors in the other colleges. We expect to have this same type of data on the professors that are willing and have a desire to help with our program in the other State-owned institutions of higher learning in Iowa, as well as the privately owned colleges and universities.

We have gathered similar facts on the certified public accountants, the patent attorneys, testing laboratories, advertising agencies, and architects. We will also tabulate information on other professions whom we expect to be using on a referral basis.

In establishing the format for the operation and organization of CIRAS, it was considered to be practically impossible to get the operation off the ground if we did not make personal contact with the industry that now exists in the State. We, therefore, divided our State into four sections and placed qualified field representatives into these specific areas. The major assignment of these field representatives until completed, is to gather pertinent data on every industry in the State.

We have stayed with SIC classification of industry and this is our bible for determining where contact should be made. The information that the field representatives gather from these Iowa companies includes all pertinent data which will be beneficial in handling requests for various types of help. Our field representatives also discuss with industry any problems which they may have. However, the major assignment on the initial contact in addition to advising industry of the availability of CIRAS, is to gather this information which we place on a retrieval system in our office.

The present staff of CIRAS is made up of nine men and two women. The administrative staff consists of myself and my secretary, who is responsible for my dictation, typing, and filing. Another stenographer serves the other professional staff in headquarters and acts as receptionist for the CIRAS office. She also does the clerical work on the retrieval system.

We have an industrial engineer who also has a masters degree from the Harvard School of Business and is responsible for the product development, production line organization, taxes, financial problems, and industrial management.

Another man in the office is a marketing specialist with minor degrees in advertising and economics. His field of operation is that of marketing and

advertising. He is responsible for the professional review of all the records before they go into the retrieval system. He also has the responsibility of establishing the format for CIRAS brochures and reports.

The staff engineer is a mechanical engineer with experience in two industries. He is filling the billet which we have set up for a young man with 4 or 5 years' experience, who has a family and who is desirous of returning to the university for an advanced degree. We are able to pay him a bit more than the usual stipend of a scholarship. His major job, besides the professional assignments given him, is to make the actual contact with the professors of the other colleges of Iowa State on a counseling basis. This requested counseling time by the staffs of the various colleges has been given unstintingly. We find ourselves using the talents of the professors in home economics, science, agriculture, and veterinary medicine very often.

The other staff member working out of CIRAS headquarters is a chemical engineer who handles assignments along his professional line. He came to us with a background of experience in the rare-earth field. He is on the staff of CIRAS and the chemical engineering department on a half-time basis with each.

The field representatives include one civil engineer, with a background of many years in municipal design, construction, operation, and administration, as well as background of industrial experience in product development, production line organization, and sales.

Another fieldman is an industrial administration graduate, who came to us from Collins Radio Co. in Dallas, Tex.

The third man is an industrial engineer with experience with Eastman Kodak Co. in Rochester, N.Y.

The fourth fieldman, who will join us on the 15th of June, has a background of agricultural engineering. His experience has been in industrial research with the Farm Equipment Institute, grain processing machinery, and advertising and sales. This then gives you some idea of the qualifications which we have tried to incorporate into the limited staff which we are able to retain.

We are convinced that the field organization is imperative in accomplishing the mission of CIRAS. The fact that the fieldmen have made over 2,700 contacts with various industries in the State of Iowa, will bear out this belief. We have also set out two large mailings of a brochure, of which I have a few available in case you are interested. Good stories have appeared in the newspapers and industrial magazines of the State. These actions have resulted in over 670 inquiries of various types.

We also believe that it is important that CIRAS be generally known throughout the State. With this in mind, I have appeared before more than 85 groups, such as service clubs and industrial development organizations, and have told the story of CIRAS to over 4,700 people.

The source of the first 670 inquiries received and handled by CIRAS are as follows:

Source of projects :	Percent
From business firms and manufacturers.....	61
Individuals.....	30
Other Government agencies.....	6
Development groups.....	3
Totals.....	100
Method of handling projects :	
CIRAS and ISU staff research.....	60
Referred to consultants (including engineers, certified public accountants, architects, testing labs).....	26
Referred to university professors (as a consulting project).....	14
Totals.....	100
Types of problems associated with projects :	
Technical.....	47
Management.....	20
Inventions and new products.....	15
Marketing.....	12
Production.....	4
Design.....	2
Totals.....	100

On April 23 of this year, CIRAS held the first meeting of its advisory council. This group consists of 21 men at the present time with 12 of them coming to the council from industry and of this 12, 2 of them are doubling in brass as representatives of industry and the Iowa Engineering Society. Two representatives of the Consulting Engineers Council of Iowa and the remaining seven include a representative of the certified public accountants in Iowa, the Iowa Manufacturers Association, the Iowa Development Commission, the Des Moines Register & Tribune, and representatives one each from the State University of Iowa, the State College of Iowa and Iowa State University, outside of the college of engineering. At the first meeting of this council, a chairman and vice chairman were selected, bylaws were discussed and will be prepared for the next meeting. We believe that this group can serve as a sounding board for the activities of CIRAS and more closely coordinate our efforts to the needs of industry in the State.

CIRAS is not a panacea for all problems connected with industrialization of Iowa. In fact, it is only a small part. It does, however, open one channel of communication with industry and makes possible a direct and positive contribution by the university to the future health of Iowa's economy.

Senator NEUBERGER. Mr. Wegner, is Iowa becoming a more industrial State and less agricultural, or is agriculture still the main source of income?

Mr. WEGNER. Well, let me say that the value of the agricultural production in 1964 amounted to \$2,600 million, and this has pretty well stabilized itself in the last few years. And the actual value of the products and the production of industry in the State amounted to \$8 billion in 1964. And this is on an incline. So we are fast becoming industrialized.

Senator NEUBERGER. And you are phasing out your dependency on agriculture?

Mr. WEGNER. Right. But we must admit there are a lot of our industries that are agriculture-oriented, which is obvious. They would have to be.

Senator NEUBERGER. Does CIRAS work with agriculture in any way, agriculture per se, that is, giving it any technological advice, or does that come from the Agricultural Extension Service?

Mr. WEGNER. No; we work very closely with the industries.

Senator NEUBERGER. How?

Mr. WEGNER. Well, they have come to us with problems of development on certain products that have come to them through inventors, they have wanted some help on it, and we get a lot of questions from small manufacturers in the State on agricultural products. They just don't know where to go for product development.

And we are very short, I think, in our State, on marketing development, and this is another area where we find a great deal of help needed.

And I think if you will notice in the statement that I gave you, it gives the percentages of the types of questions that we have had to answer.

Senator NEUBERGER. Well, that is the sort of thing I was interested in. I will look at that. Fine.

Thank you very much.

Senator NEUBERGER. Now we will hear from Dr. Thomas F. Malone, vice president for Research, Travelers Insurance Co., Hartford, Conn.

**STATEMENT OF DR. THOMAS F. MALONE, VICE PRESIDENT FOR
RESEARCH, TRAVELERS INSURANCE CO., HARTFORD, CONN.**

Dr. MALONE. Thank you, Madam Chairman. I appreciate this opportunity to support the proposed legislation. With your permission I would propose to summarize my prepared testimony and amend it in one important respect.

Senator NEUBERGER. Fine.

Dr. MALONE. By way of summary, I would make these five points. First, the problem to which this legislation is addressed is to my mind ranking in importance with the major problems confronting our country. Specifically, with the invention of the powerplant, which multiplies the muscle power, with the development of the computer, which extends the capability of the mind, we now have a potential capability for economic growth which we must transform into accomplishment. This is what your bill is intended to do.

Secondly, I would emphasize the importance that I attach to initiative, resources, and participation at the State level. I think this is essential.

Third then, I would like to refer to some things that are going on at the State level in Connecticut, which to my mind extend, complement, and interact with the State Technical Services Act of 1965.

Our problem in Connecticut, which is a highly industrialized State, is to generate at least 12,000 new jobs per year over the next 10 years, in order that we can realize the increment of \$4 billion in personal income. To that end, there has been recommended to the State assembly—and my amendment is to advise you that this proposed legislation was enacted yesterday afternoon in Connecticut—there was proposed by Governor Dempsey the establishment of the Connecticut Research Commission, which has these functions.

(1) To conduct a continuing review of the research, scientific, and technological programs of agencies of the State.

(2) To identify problems, matters or areas relevant to the interests and welfare of the citizens of Connecticut, which it deems should be made the subject of research.

(3) To initiate or support research regarding such problems, matters or areas through any agency of the State, through the University of Connecticut, through any private institution in the State which is engaged in research, and through any joint collective regional or interdisciplinary group or organization in the State which is engaged in research, or which is composed of institutions engaged in research.

(4) To review the published findings of research in Connecticut and elsewhere and propose ways to—and here is the important point—to translate such findings into more jobs in Connecticut industry.

(5) To make recommendations to achieve more effective utilization of the research scientific and technological resources and facilities of the State agencies.

(6) To foster appropriate cooperation in the research activities of agencies of the State.

(7) To collect and disseminate information, which the previous speakers have touched upon, about research, scientific and technological programs of the Federal Government. Here is where the State program in Connecticut and your proposed legislation come right together.

(8) To provide an information service about institutions engaged in research activities in the State of Connecticut.

(9) To provide an advisory service on research, science, and technology to the Governor, the general assembly, and to other agencies of the State.

(10) To publish such documents as well, in its judgment, further its purpose under this act.

(11) Maintain liaison with all private organizations in Connecticut engaged in research activities, and research councils organized to promote research activities and render to such private organizations and research councils coordinating and advisory services which they may request.

With that charter, the bill has gone through, and it will probably be signed by the Governor today and take effect July 1. Something on the order of three-quarters of a million dollars it is expected will be appropriated in support of the activities of this commission.

The fourth point I would like to make by way of summary is to suggest the opportunity, by things going on in Connecticut, which have been described in other States, and this legislation, to create a new partnership of effort among private business, the State government, the Federal Government, and the universities.

And since you have earlier raised a question about support or objection to this kind of activity, I think it would be of interest to you to know that the research commission, which I described, in Connecticut, has the support of labor, of business, of both political parties, and of the universities.

In the testimony for this kind of thing, President Diem of the University Research Institute in Connecticut spoke for the universities. William Thoms, the research director for the labor council, spoke in support of it on behalf of labor. Mr. Carl Hansen testified on behalf of the State chamber of commerce in support of it. Governor Dempsey proposed the legislation, and it was supported by Mr. Lewis Gladstone on the Democratic side of the house, and Mr. Robert Orcutt on the Republican side of the house.

I think this may reassure you that there is a broad base of support for this kind of thing in Connecticut.

My final point is almost a philosophical one, but I feel that the cause of much of the unrest around the world is the growing disparity in the standard of living among nations. This will be alleviated by a more effective translation of the tools of science and technology into economic growth. By showing how this can be done in the United States, I think we may, as a byproduct, help to alleviate and point the way to other parts of the world.

Thank you.

(The prepared statement of Dr. Malone follows:)

STATEMENT BY THOMAS F. MALONE, SECOND VICE PRESIDENT AND HEAD OF RESEARCH DEPARTMENT, THE TRAVELERS INSURANCE COS., HARTFORD, CONN.

Mr. Chairman and members of the committee, I appreciate the invitation to appear before your committee this morning and comment on the proposed State Technical Services Act of 1965. My firm conviction that this proposed legislation is both highly desirable and very timely has been formed as a result of—

1. An examination of the interaction of science and technology with economic growth in Connecticut in which I was privileged to participate as a member of the Connecticut Research Advisory Committee.

2. My observations on the importance to the relatively large company with which I am employed of applying the advances of science and technology to our operations in the services sector of the economy.

3. My experience as a member of the board of directors of a small electronics company in Hartford, Conn. (Dynage, Inc.), which depends on innovations arising from the application of science and technology to manufacturing production in order to achieve the profitable growth which contributes in a small but important way to (a) the total value of goods and services produced in our local community and (b) the number of jobs and income generated in Greater Hartford, and which makes possible the return on their investment to which our stockholders are properly entitled.

4. Some impressions on the overall importance to world problems, and hence to our Nation, of "the wider diffusion and more effective application of science and technology in industry"—the purpose of S. 949—that have remained with me from deliberations on this general topic within the Committee on Natural and Social Sciences that it is my privilege to chair in the U.S. National Commission for UNESCO.

Naturally, the views I offer today are my own—and not necessarily those of the companies and committees I have mentioned—but it is in the context of these associations and activities that my views and convictions have been formed.

Since one of the features of the proposed State Technical Services Act that makes it attractive to me is the emphasis it places on initiative, resources, and participation at the State level, permit me to describe some developments in Connecticut that suggest the timeliness of this proposed legislation and encourage one to believe that new patterns of productive partnership can be developed among the Federal Government, the State government, industry, and the universities. May I note, in passing, my particular delight that our distinguished Senator Ribicoff from Connecticut is associated with Mr. Magnuson in introducing this legislation.

At first glance, it might seem that Connecticut really has no great problems in applying science and technology to economic growth. With a population of 2.8 million and nearly 1 million nonagricultural wage and salary workers, we have one of the highest industrial outputs per capita of any State in the country since we have 42.6 percent of our labor force in manufacturing. Backing up the 421,000 people in Connecticut's manufacturing industry, we have over 27,000 scientists, engineers, technicians, and support personnel in 400 organizations engaged in research and development.

What, then, is our problem? It is this: Between now and 1975 we must create in Connecticut 240 new jobs each and every week to provide gainful employment for our expanding labor force that is growing right along with our population. To generate this number of new jobs each week, we must do two things:

1. Expand the volume of goods and services now being produced. A prerequisite to doing this is the continued gain in our productivity (i.e., output per man-hour). To give you some idea of what we have been able to do in this respect in the past, I might cite figures developed by the Connecticut Labor Department which indicate productivity gains of 42, 62, and 33 percent in manufacturing, insurance, and construction, respectively, over the past decade. To remain competitive domestically and in the foreign markets (and our interest in expanding our exports have taken such tangible manifestations as the famed Yankee Pedlar—Greater Hartford's Flying Showcase—program that brought exhibits of our products directly to 11 major European cities last year and to Central and South American markets this year), we must continue to increase our productivity.

A substantial portion of these gains must come from even more effective applications of science and technology. For example, in the Travelers Insurance Cos. we are looking forward to further gains in our productivity by harnessing the science and technology of an extremely rapid and comprehensive data processing and communications system that will link our new data center in Hartford to our casualty-fire reporting offices around the country.

2. Expand the variety and range of the goods and services we produce by emphasis on and support for the innovative entrepreneurship that, under our free enterprise system, is the mechanism by which new ideas, new technology and new skills are matched with new needs to produce new markets. To be specific, we need many more small new companies similar to Dynage which

converted advances in semiconductors into over 400 different models of marketable product lines that include voltage reference standards, modular direct current power supplies, precision direct current voltage calibrators and signal simulators, industrial-type direct current to alternating current inverters, etc. The range of examples could be multiplied endlessly, but the point I am trying to make is that whether you are considering a company with 20,000 employees or with only 25, its survival and profitable growth is inextricably linked to this matter of translating science and technology into the production of new or improved goods and services and thereby creating new jobs.

Now I believe we all recognize that there is no such thing as a little black box into which we insert science and technology on one side and out comes economic growth on the other side. But, let me describe briefly some of the things underway in Connecticut which are intended to tackle this problem. I believe the timeliness of the proposed State Technical Services Act of 1965 will be evident as well as the manner in which this Federal program will interact with our State plans.

In a report submitted to Gov. John Dempsey last January, the Connecticut Research Advisory Committee recommended the establishment of a Connecticut Research Commission as a necessary and desirable condition for insuring economic growth in the era of rapidly changing science and technology. Provision for this commission was made in the Governor's budget message and the appropriate bills have been favorably reported out by the cognizant committees. According to the terms of modified senate bill 701, the commission shall—

1. Conduct a continuing review of the research, scientific, and technological programs of agencies of the State ;
2. Identify problems, matters, or areas relevant to the interests and welfare of the citizens of Connecticut which it deems should be made the subject of research ;
3. Initiate or support research regarding such problems, matters, or areas through any agency of the State, through the University of Connecticut, through any private institution in the State which is engaged in research, and through any joint, collective, regional, or interdisciplinary group or organization in the State which is engaged in research, or which is composed of institutions engaged in research ;
4. Review the published findings of research in Connecticut and elsewhere and propose ways to translate such findings into more jobs in Connecticut industry ;
5. Make recommendations to achieve more effective utilization of the research, scientific, and technological resources and facilities of State agencies ;
6. Foster appropriate cooperation in the research activities of agencies of the State ;
7. Collect and disseminate information about research, scientific, and technological programs of the Federal Government ;
8. Provide an information service about institutions engaged in research activities in the State of Connecticut ;
9. Provide an advisory service on research, science, and technology to the Governor, the general assembly and other agencies of the State ;
10. Publish such documents as will in its judgment further its purposes under this act ;
11. Maintain liaison with all private organizations in Connecticut engaged in research activities and research councils organized to promote research activities, and render to such private organizations and research councils coordinating and advisory services which they may request.

In the hearings on this matter, strong support was expressed by spokesmen for the Connecticut State Chamber of Commerce, labor, and the universities. It is clear, I believe, that this local activity complements and extends the basic objectives of the proposed State Technical Services Act of 1965. I hope very much that the prompt and positive action which we expect from our Connecticut State Legislature will be matched by similar action on the part of your committee.

Finally, I would close by remarking that the problem of converting the fruits of science and technology into economic growth with which we are wrestling in our highly advanced national society is but a special class of a general problem that confronts the world at large. During the past century or so, science and technology have brought within reach the capability of satisfying man's primitive needs for food, clothing, shelter, and the amenities that make life worth living. One of the challenges of our century is to convert this latent capability into

reality. There is an almost pathetic desire to do this among the so-called developing nations of the world and as the famed economist, Lady Barbara Ward Jackson, has said, the growing disparity between the rich and poor nations of the world is "inevitably the most tragic and urgent problem of our day" and certainly the root cause of much of the unrest that prevails around the world. If, in meeting our own legitimate national self-interest, we are able to demonstrate to the world how this task can be done, we may well have made a significant step in the direction of creating that better world for tomorrow of which we all hope and pray and work to achieve.

Senator NEUBERGER. We appreciate your ability to summarize your remarks, Dr. Malone. I have had an opportunity to examine the entire statement.

I am curious about the insurance business and its interest in this bill. I noticed just one reference to computers, I think. How would the insurance business make use of this service?

Dr. MALONE. May I answer your question in two parts? First, why is insurance interested in this bill? We, as an element in the private sector of the economy, rely for a substantial part of our business on the business and industry of the country. It is in our enlightened self-interest to see business enterprise flourish, prosper, and grow, because our business will grow with it, Travelers Insurance Cos., specifically. That is the first question you asked.

The second is that the insurance business is, in contrast to an organization which produces washing machines, or radios, a giant processor of information. We are a paper factory, in a sense. We take policies and have to do things with those. The computer multiplies the effectiveness of our people in processing this information. And therefore it increases our company productivity. And this is why we are embarked on a substantial program to enhance our effectiveness in processing information concerned with the conduct of our business. Does that answer your question, Madam Chairman?

Senator NEUBERGER. Yes. I also wanted to ask about the participation of the private universities in this program which you referred to, that is, the programs of Governor Dempsey, the State program, which had universal support. Does this allow for private institutions like Yale to participate?

Dr. MALONE. Yes, it does. In our State we have a mixture of State-supported institutions and private institutions. We want to draw upon the resources in both, the private universities and the State universities. On the committee which made this recommendation to the Governor, the chairman was the dean of the graduate center of Rensselaer Polytech Institute in Hartford, and also on the committee was Mr. Martin from Yale and Professor Coogan from the University of Connecticut, so we had the representation and participation of both the private and public universities.

Senator NEUBERGER. Thank you very much.

Is Mr. Fielding Lewis here?

(No response.)

Senator NEUBERGER. Has Mr. George Hubley come in yet?

Mr. HUBLEY. Yes.

STATEMENT OF GEORGE W. HUBLEY, DIRECTOR, STATE OF MARYLAND DEPARTMENT OF ECONOMIC DEVELOPMENT, ANNAPOLIS, MD.

Mr. HUBLEY. Madam Chairman, I appreciate your invitation to appear before this committee today to discuss the merits of the proposed State Technical Services Act of 1965.

Gov. Millard Tawes, of Maryland, has already expressed his interest and support of the proposed act in letters to the Honorable Secretary of Commerce, John T. Connor, and even earlier to his predecessor, the Honorable Luther Hodges. Governor Tawes has also advised the members of the Maryland congressional delegation of his enthusiastic support for the kind of a technology transfer program such as we believe this act would provide.

I am speaking as director of the Maryland Department of Economic Development, which has sponsored a program enacted as secretariat to a program known in Maryland as the Governor's science resources advisory board. The reasons that the State of Maryland believes in this proposed legislation are many, but I think I can state them in three parts, three major reasons, which are as follows:

One, through the department of economic development of the State, Maryland has fostered a program of encouraging directly research and development-oriented industries, both those that are already established and in operation in Maryland, and those that are in the process of formation. The Department of Commerce through its science and technology program has been very helpful in the past. The proposed program will, I believe, enable the State of Maryland to fulfill its economic development function much more effectively in this specialized field of encouraging action which will foster the development of science-oriented industry.

Two, this act will make it possible to assist our defense-oriented industries in a program of product diversification, by reducing their dependency upon defense expenditures of the Government. In other words, the act would make possible a transition in the future to a hopefully peacetime economy with a minimum of technological unemployment, or waste of technically trained professional people.

Three, we believe that such a program, thoughtfully carried out, will enable the State of Maryland to provide additional job opportunities not only at the professional level, but at all levels of education and skill through the application of federally inspired research to the problems of using our resources, both raw materials and human productivity more effectively.

This, then, essentially, would implement the main aim of Maryland's economic development program. Through the proposed Federal assistance program, we hope to be more effective and to translate that effectiveness into regional programs within the State, particularly our three Appalachian counties, the counties designated in Maryland as the southern Maryland, and the counties that are commonly known as the Eastern Shore, which make up part of the Delmarva Peninsula, and which, for a long time, have been confronted with persistent economic distress.

The proposed legislation, I believe, will be particularly effective because it does take into account the industry mix, the natural resource wealth, as well as other factors peculiar to each State's economy. In this regard, I think the act makes possible maximum flexibility at the individual State level, yet supplies those guidelines of administration necessary to assure proper interpretation of the goals and purposes intended.

By graduating the expenditure according to the population of the individual States, such a program makes funds available on a controlled basis, and I think on an equitable basis, requires the States to mobilize their own intellectual resources, and to make their own investment. In the case of Maryland, such a program is important, because, at the present time, we are working with a minimum of funds, and such assistance would enable us to increase our services to industry in an area of endeavor in which I think it is most needed.

That, Madam Chairman, concludes my abbreviated testimony, and I again would like to express my appreciation for this opportunity.

(The complete statement of Mr. Hubley follows:)

STATEMENT BY GEORGE W. HUBLEY, JR., DIRECTOR OF THE MARYLAND
DEPARTMENT OF ECONOMIC DEVELOPMENT

Mr. Chairman, I appreciate your invitation to appear before this committee today to discuss the merits of the proposed State Technical Services Act of 1965.

Governor Tawes, of Maryland, has already expressed his interest and support of the proposed act in letters to the Honorable Secretary of Commerce, John T. Connor, and even earlier, to his predecessor, the Honorable Luther Hodges. Governor Tawes has also advised the members of the Maryland congressional delegation of his enthusiastic support for the kind of technology transfer program such as this act would provide.

Because the creation of a positive business climate within Maryland capable of attracting research and development firms is a continuing function of the State's economic development program, the proposed act has many features which we believe will be of invaluable assistance to the citizens of our State. I should make it clear that within this particular function of the State's economic development program I am talking not only about creating a climate which will encourage the birth of new firms, but will also serve to encourage the healthy expansion of existing Maryland industry.

Economic development, like the smile on the Mona Lisa, is capable of many interpretations. Therefore, with the committee's indulgence, I would like to define what I believe economic development to be particularly as it relates to Maryland's interest in the passage of this legislation.

Economic development is the coordinated effort within the State to create employment opportunities for its citizens through the effective use of all available natural and human resources. To accomplish this goal, economic development requires cooperation between the State and the private economy. The keystone of such cooperation is communication. The State's economic development program should provide a single information source equipped to supply private investors, whether they are putting money or talent on the line, with germane accurate information about the State's economy as well as its prospective industrial needs both with regards product and manpower requirements. An important element in such a program is the effective dissemination of available research, and the encouragement of needed research to effect the development of new industrial possibilities from recent findings in science and technology.

The proposed act would assist us in accomplishing this function.

The State of Maryland has recognized both the advantages and the problems attendant upon the development of a program directed to the attraction and assistance of science-oriented industry. In May 1961, Governor Tawes sponsored the first conference on science-oriented industry to be held within the State. Later, the Maryland Economic Development Commission recommended the formation of a science resources advisory board which has, as its function, the con-

tinuing scrutiny of all the State's resources to determine what steps should be taken to make Maryland even more attractive to those companies solely engaged in research and development, or which are mainly dependent upon technological innovation for proper and healthy growth.

This science resources advisory board has had a demonstrably effective, and highly active life since its formation. Upon its recommendation, the Governor and the General Assembly of Maryland have approved the construction of a \$6 million-plus science center for the use of the scientific community on behalf of the Maryland Academy of Sciences.

It has reviewed, with affirmative conclusions, the opportunities for undergraduate, graduate, and postdoctoral education throughout the State.

The board has also recommended that the Governor place his support firmly behind a proposal for the establishment of a national institute for advanced studies—as a national educational resource, not merely a captive Maryland institution.

And finally, this science resources advisory board has recommended to Governor Tawes that an industrial extension facility be created which will disseminate the results of nonclassified, federally funded and inspired research to private industry. Such a program envisions a three-way liaison between the department of economic development, the Maryland Academy of Sciences, and the appropriate departments within the universities, for the purpose of analyzing available material for its potential translation into industrial and/or consumer products. This service, subject to periodic review to determine its effectiveness, at a modest cost of \$52,000 per annum for 5 years (the first phase of operation) is to function as an operational arm of the department of economic development, making use of its close liaison with the Maryland industrial community in addition to tapping the lines of communication established by the department in its capacity as secretariat to the Governor's science resources advisory board. The technical referral center, as this data retrieval program is called, is later to be housed in the Maryland Science Center when this facility is completed.

The committee may well ask what the program provided for in the legislation under discussion has to offer if Maryland has already recognized the need for such an activity and is planning to carry out such a program?

In reply I should point out that such a sophisticated industrial extension program is not a completely simple, uncomplicated process such as, for instance, the transmission of stock market sales, or commodity exchange statistics. To be effective, the transmission of research data on products and/or processes provided for in this legislation requires a series of value judgments.

To be effective, the administrators and line personnel must walk a clearly discernable line between the wasteful bulk shipment of undigested research papers to private industry and the rather alarming prospect of creating a Government-financed management consulting service intent upon usurping some of the rights and prerogatives of private enterprise.

The program as provided will assist Maryland in doing its job more effectively because it will increase the sources of data available to us; it will, I believe, allow us to be of much greater service to Maryland's industrial community within an operational framework that provides us with adequate guidelines for policy as well as considerable support in the data retrieval field; the program, too, would certainly permit Maryland to broaden the scope of its contemplated program while achieving a quality level and control in the dissemination of information possible only by the addition of Federal funds and Federal data sources in contrast to a more parochial approach limited in perspective and in the services it could supply industry within the State.

The technology transfer program, in my view, fills a sharply defined need to assist the traditionally defense-oriented segment of industry in exploring the possibilities of diversification in product line to industrial and consumer markets against the hopefully ever-present prospect of conversion to a peacetime economy.

By making such research data available to private industry, and I am referring specifically to small- and middle-sized research and development-oriented companies, we are truly performing our economic development function because we are assisting private industry to employ additional people, particularly our technically trained citizens at the professional level. These scientists and engineers represent a major resource within our industrial community as well as a major investment on the part of our educational system. Any program which stabilizes the distribution of professional scientific talent within Maryland's borders while tending to discourage the "brain drain" to one or two highly condensed research

and development colonies where sunshine is a major commodity is in both the national interest and Maryland's enlightened self-interest.

Although Maryland by the happy fact of its close proximity to the National Capital has been quite fortunate in attracting an appropriate share of those companies who sell their talents and products either exclusively or largely to the Federal Government, the fact is that such a unique dependency on a single customer is an unhealthy business development. With the added scope and impact of the technology transfer program, we hope to encourage a form of industrial versatility, an interest in the use of Maryland's raw materials in new processes or improved products.

The availability of information on new technologies and the possibility of relating such data to the increased use of Maryland's natural resources has the added advantage of increasing opportunities for satellite manufacturing plants involving all levels of employment—an important consideration in several regions within the State which have unemployment or underemployment problems.

The research data dissemination program has the potential to assist those Maryland counties designated as part of Appalachia; it can very possibly assist the southern Maryland counties to convert a wealth of natural resources into employment opportunities; and, of course, the Eastern Shore of Maryland has both immediate and long-range potential for research and development firms oriented to food processing, to packaging and to agricultural technology, as well as other fields.

The strength of Maryland's science-oriented industrial community, however, lies within the heart of the State, a major concentration of scientific talent and activity which includes virtually every scientific discipline and combination of disciplines in use in the world today. It is this concentration of science-industry which will profit most immediately.

In conclusion, I should like to say that without such a vehicle as the proposed State Technical Services Act of 1965, and the opportunity it affords every State to draw upon the tremendous wealth of unclassified Federal research, the small businessman, or manufacturer is deprived of access to information which might in the future spell the difference between bankruptcy and a continuing successful operation. Without such a data retrieval activity, there is the possibility that both Government and industry might find themselves spending large sums of money redundantly to perform research projects which have already been accomplished, then filed and forgotten.

This program is not a simply problem in communications, but we in Maryland believe strongly that we would be remiss in our duty to industry and our citizenry if we neglect to explore and appraise as best we can the potential wealth of the available Federal research, and in turn relay such appraisals to industry.

The State Technical Services Act of 1965 will serve to increase the effectiveness of that appraisal process in Maryland to an immeasurable degree.

Mr. Chairman, may I again express my appreciation to you and to the members of our committee for this opportunity to express my views.

Senator NEUBERGER. I have been glancing through your prepared statement, and it is of great help to us to have it. Senator Brewster is a member of this committee and he would have liked to have been here and he sent his regrets earlier this morning. It is somewhat amazing to us, the members of this committee, to find a bill that has such universal acceptance. I keep waiting for somebody to come forth and make some objections to it. This unanimity, however, doesn't necessarily mean it will pass, but so far we haven't found any criticism. It is almost the millenium to come upon a bill that is so good.

We appreciate having your remarks too, Mr. Hubley. Thank you very much.

Has Mr. Fielding Lewis come in yet?

(No response.)

Senator NEUBERGER. We were anticipating a representative from the Governor of West Virginia, and I particularly am disappointed he is not here, because I saved a question for him, that I was going to ask of one of the earlier witnesses, about how they are using this to solve the

problems in Appalachia, or in the coal business. But we may have that come up tomorrow.

The committee will reconvene tomorrow morning at 10 o'clock to conclude the testimony on this bill. The first witness tomorrow will be Mr. John McGowan, director of the library, Franklin Institute of Philadelphia.

Thank you very much.

(Thereupon, at 11:20 a.m. the hearing was recessed, to reconvene at 10 a.m. the following day.)

STATE TECHNICAL SERVICES ACT

THURSDAY, JUNE 10, 1965

U.S. SENATE,
COMMITTEE ON COMMERCE,
Washington, D.C.

The committee met at 11:15 a.m. in room 5110, New Senate Office Building, Hon. Frank J. Lausche, presiding.

Senator LAUSCHE. Mr. John McGowan, director of the library, Franklin Institute, Philadelphia, Pa.

STATEMENT OF JOHN P. MCGOWAN, DIRECTOR OF THE FRANKLIN INSTITUTE LIBRARY, PHILADELPHIA, PA.

Senator LAUSCHE. Mr. McGowan, I notice you have a statement. It will be placed in the record fully. After identifying yourself, I think it would be advisable that you state briefly, without reading, the highlights of what you have in mind.

Mr. MCGOWAN. Well, I have abbreviated quite a bit. If you don't mind, I would like to read it. It won't take more than 9 minutes, I think. It is summarized and there are points I do want to cover.

Senator LAUSCHE. All right. Go ahead.

Mr. MCGOWAN. My name is John P. McGowan, and I am the director of the library of the Franklin Institute of the State of Pennsylvania, located in Philadelphia. I appreciate the opportunity to appear before you this afternoon in support of the objectives of S. 949. The proposed legislation contains many features that closely resemble what we have been doing at the Franklin Institute since its founding. Its emphasis on improving technical and scientific communications has been one of our primary concerns during this long period. Perhaps the best way to evaluate the services proposed under S. 949 is to first report the experiences of the Franklin Institute in engaging in this kind of work over a period of 141 years.

When the Franklin Institute was organized in 1824, among its committees were: instruction, inventions, premiums and exhibitions, library and models.

The committee on instruction developed a faculty, a high school, and schools devoted to mathematics, drawing, naval architecture, machine design and so on. These schools trained scientists and technologists long before such schools were organized by colleges and universities. One of the alumni of the Franklin Institute School was Thomas M. Walter, who became the architect for the wings and dome of the U.S. Capitol and of other buildings in Washington. The work of the faculty is continued today by the monthly scientific lectures delivered at the institute and the extensive science education program of our science museum.

The committee on inventions, now the committee on science and the arts, was instituted to examine and report on all new and useful machines, inventions, and discoveries submitted to them. Today this committee makes recommendations for the award of the various medals of the institute.

The committee on premiums and exhibitions conducted 27 exhibitions of American manufacturers between 1824 and 1874. The purpose was to exhibit American made goods and to make awards to the manufacturers. The institute also conducted the National Electrical Exhibition in 1884, and the novelties exhibits of 1885, and in 1899, was cosponsor of the National Export Exposition which was organized to exhibit goods made in the United States and to promote and export in foreign trade.

The library has grown to be one of the important scientific and technical libraries of the eastern United States, especially rich in chemistry, physics, and engineering. The Journal of the Franklin Institute has been published continuously since 1826.

From its early years, the institute has engaged in research. About 1829, a study of water wheels was made and the results published in the journal. Between 1830 and 1837, an elaborate study was made of the explosions of steam boilers in cooperation with the Secretary of the Treasury of the United States. The results were published in a series of reports in the journal. The outgrowth of these studies is the Franklin Institute Research Laboratories which serve both government and industry.

Most recently, we have undertaken certain activities that have a direct bearing and relation to the State Technical Services Act of 1965. As early as 1959, the Franklin Institute has been aware that there was a real and demonstrable need for a specialized technical information center to serve the eastern part of Pennsylvania. A survey was conducted by two independent consultants to appraise this need and to determine in some detail the kinds of information services that were required by industry. After meetings and consultations with a number of companies, a recommendation was made and accepted by our board of managers that the institute develop a technical information center to be called the Franklin Institute Science Information Service. This center would offer specialized types of scientific and technical information assistance to our industrial community and would draw upon the vast resources of the Franklin Institute library for support.

This facility contains over one-quarter million volumes in engineering, physics, chemistry, current subscriptions to over 3,500 journals, and has a collection of over 5 million patents.

The Science Information Service has been functioning as a technical information center continuously since that time. It has offered over 150 companies direct assistance in identifying, locating and evaluating pertinent, technical and scientific information which could be used in improving some aspects of a company's technology. The Franklin Institute Research Laboratory has actively cooperated in this process by providing interpretative analysis of the information. To the many companies who have used the service, SIS offers a means by which a company comes in contact with the new and past developments in technology as they appear in the world literature.

There are two specific services which are offered by SIS:

(1) The current awareness service. The Science Information Service organizes an industrial client's interest into a profile interest index and identifies in the current scientific and technical literature all pertinent material and data which match up with his profile interest index. At stated intervals the client is given a full report of the findings. Over 3,500 foreign and U.S. journals and all patents received from the United States Patent Office, British Patent Office, and Swiss Patent Office are checked to insure that relevant data is identified.

(2) The retrospective literature service. To identify worthwhile ideas, the Science Information Service also investigates past published literature to exploit scientific and technical accomplishments developed at an earlier time. The Science Information Service identifies pertinent articles bearing on a particular problem and organizes and presents the findings in an abbreviated format designed for optimum use. Information that is identified in foreign publications is translated. The technical information is presented to industries in many formats depending on their unique needs. In many cases a pertinent article is photoduplicated and promptly mailed to the requester. To improve this service, the Franklin Institute for a period of 5 months conducted an experimental facsimile system which permitted SIS to send full-size technical articles to a client 20 miles away by means of electronic equipment within an hour after the request was received.

The Franklin Institute has been fully aware that technical and scientific information services to industry are important elements in promoting growth. It has also been fully aware that there is a need for scientists and engineers to conduct research programs and transmit their findings rapidly to industry.

The Franklin Institute has been conducting such a program for many years. It fully recognizes that many industries are severely handicapped because they lack the technical knowledge necessary to keep pace with a rapidly changing technology and consequently are unable to compete and grow effectively.

The nature of these changes, their interdisciplinary character, involving many different types of specialized scientific and technical fields has placed the Franklin Institute Laboratories in a unique position to provide technical assistance to these industries. Scientists and engineers in 12 major divisions of the research laboratories have worked closely with many industries providing solutions to problems, identifying new technical areas for growth and alerting industry to the importance and use of new research results. Due to the complete understanding on the part of the institute's scientists and engineers on how to communicate and to interpret research findings to the various levels of scientific and technical personnel of various companies a successful and long-standing relationship has been fostered between industry and the institute.

We feel that the family of nonprofit institutions, of which the Franklin Institute Research Laboratories is a part, is eminently qualified to carry out many of the programs stated in S. 949.

The State Technical Services Act of 1965 contains numerous features that resemble our research and information services program. Based on our experience, we fully support the concepts set forth in the bill. It is our feeling that the bill is important and has many desirable

attributes. It recognizes that scientific and technical information is necessary for economic growth and introduces the concept of a technical information center as a mechanism by which this information will get into the hands of the user.

The bill also recognizes that scientific and technical knowledge will be used to identify and solve each State's technical and economic problems. This type of systems approach, utilizing both the technical information center concept and research and development skills to solve the very complex problem of industrial and technical obsolescence is sound.

We feel, however, that there are several features of the proposed legislation which need clarification. The bill, as it is now written, encompasses too wide a field. There is a great deal more precision needed in defining the role of the original information center and its relationship to the research and development effort. To a large degree, the bill focuses on the entire field of technical and scientific communications—an area of such sizable dimensions and difficulties that there is some doubt in our minds about the feasibility of undertaking such a task in one broad sweep.

There is nothing in the bill that indicates how to integrate the activity of each State's effort into an overall plan to reduce duplication and waste which will surely occur. We realize that many States will have unique types of problems which will lend themselves to the design of special problem-oriented centers applicable to their region. However, there are certain problems that are common to all and these should not be undertaken by each region. A national information system may be needed to insure that there is sound integration of all the State's common efforts.

The bill as it now reads prevents the regional centers from dealing directly with a unique and discrete company. We feel that this provision will place severe restrictions on the operation of such centers, providing an industry with the same information and not providing a company within that industry with specific information to solve its own problems appears to us as unsound. What is likely to happen is that a given company will be obtaining a great amount of material that is not applicable to its operations. The real answer to the technical and science information problem is to provide a company with pertinent, timely, and evaluated information that has a direct bearing on its information problems. We know that technical and scientific personnel do not want to wade through a quantity of technical documents.

We are also concerned that the bill completely overlooks the role of the professional society. On page 2 of S. 949, it reads:

The Congress further finds that the several States through cooperation with universities, communities and industries can contribute significantly to these purposes by providing technical services designed to encourage a more effective application of science and technology to both new and established industries.

The professional society, through its scientific and technical publications, meetings and symposia programs, serves as the principal mechanism for disseminating new research results to the scientists and engineers of this country. Some of these societies have established information centers; others are in the planning stages. The Engineers Joint Council, which represents through its 33 affiliated societies,

approximately 500,000 engineers, is currently developing such an engineering information center.

Every effort should be made to utilize the experience of the professional societies and not to overlook the information systems that these groups have developed. Ultimately, it will be desirable to link these system to the Federal system, particularly since they cover the open literature and professional publications of these societies which in many cases contain technical data of importance and quality.

It must also be kept in mind that there is presently not enough qualified personnel available in the United States to undertake the planning, organization, and administration of such centers and consequently many States will find it extremely difficult to put such program into operation. A training program will be a necessary part of this activity if it is to be successful.

The bill should recognize the technical and scientific library as an important element in the dissemination process. Nowhere in the bill is there any mention of the library. This is a serious omission.

In summary, we feel that the bill's objectives are extremely desirable and that there is every indication that if properly planned and organized, regional information centers and research and development efforts can promote economic growth. We support the bill, but suggest that there is a need for some modification and expansion.

Senator LAUSCHE. Does not the bill provide that in the establishment of an agency within the State, that either an arm of the government or a nonprofit organization may be designated to do the administrative work.

Mr. McGOWAN. That is right, or an educational institution. The emphasis is primarily on land-grant colleges, as it stands now, that would undertake some of these assignments, these tasks.

Senator LAUSCHE. Do I judge from your paper that you are of the opinion that an engineering society could not be chosen as the administrative agency?

Mr. McGOWAN. As the bill reads now, I would think not. It seems that it leaves out the societies completely. We have discussed this at our engineering society and it is the consensus of our committee that the society would not be an agent in this process. We are not suggesting they should be here.

Senator LAUSCHE. To put it in capsule form, will you restate what you believe ought to be the objective of the bill in choosing the agencies that are to administer the program within the States?

Mr. McGOWAN. Well, I think the bill provides that every organization within the State that has a capability can qualify for this. I feel that the bill provides for this. I think there are some difficulties in considering only the emphasis on the land-grant college. I think the nonprofit institutions are certainly one group of organizations that are very well qualified to undertake some of these assignments.

I was here at yesterday's testimony, and I think there has been an emphasis on the land grant colleges and universities undertaking some of this activity.

Mr. PERTCHUK. But it is true a nonprofit institution can undertake assignments as part of the program. What you are suggesting is the nonprofit institution may be the administering agency, or the "designated insitution," as the bill now reads.

Mr. McGOWAN. That is possible, yes.

Senator LAUSCHE. Does the bill as it now reads allow a nonprofit organization to become an assignee of a certain function?

Mr. PERTCHUK. Yes.

Senator LAUSCHE. But the administrative work must be carried out by a State agency?

Mr. PERTCHUK. Or by a land-grant college, as I understand it.

Senator LAUSCHE. What do you have in mind about the library service?

Mr. McGOWAN. Well, I believe there are many elements of this particular bill that could be carried out by the library. Many of them are at the present time doing this very job. I only propose that in the bill some mention be made of the library as a possibility for taking on some of these tasks.

Senator LAUSCHE. One final question: are you in accord with the aim that this newly created service shall be limited to the dissemination of scientific knowledge, and that through this service the industries of the country will be able to utilize the most modern methods to bolster their production.

Mr. McGOWAN. Yes, sir.

Senator LAUSCHE. You do not believe that this agency should engage in research and development work of its own?

Mr. McGOWAN. No. I subscribe that the agency would disseminate information as you stated, and the R. & D. effort would be handled by private consulting organizations.

Senator LAUSCHE. This would be in addition to the tremendous range of research in which the Government is presently involved.

Mr. McGOWAN. This wide range of activity, yes, I subscribe to this.

Senator LAUSCHE. All right.

I wanted to make the record clear that there is a general consensus that this agency should only be vested with the authority to communicate to industry and business information that would be of service to those industries in improving their productivity.

Mr. McGOWAN. I envision this as a mechanism by which this information can quickly and efficiently get into the hands of these people. I do point out there are problems, the way the bill now reads, that it doesn't deal with discreet companies; it is industry across the board.

Senator LAUSCHE. What do you mean by "discreet company"?

Mr. McGOWAN. Assume we have four or five companies in the Philadelphia area dealing in the field of optics. The way I read this bill is the agency that would handle this would issue to all of these companies the same information in optics across the board, but they would probably not be permitted to deal with a unique discreet company in an information problem that one company had.

The bill, as it reads now, at least to my understanding, is concerned with industry, not a specific company. Now, this, to me, presents a real problem because by providing information, the same information to many, or to the industry, it doesn't solve or help solve some of the information problems of a particular company.

Do I make myself clear on this point?

Senator LAUSCHE. Yes, you do.

Mr. PERTCHUK. I was going to say it is true, as was testified yesterday, that the center could refer a specific business which had a problem

to a consulting engineer or other consulting agency for the solution of individual problems.

You mention in your statement that this would limit the functioning of the center. It wouldn't limit the functioning of the center; it would limit its ability to receive matching funds.

Mr. McGOWAN. As the center operates, would it be able to discuss with a company its specific problems? What I am trying to arrive at is the real difficulty in scientific information is not providing a lot of companies with a great deal of information. You have got to provide them with pertinent, technical evaluative information, specific to their needs.

And I envision problems with an organization that would send across to all of the optics industries information in the entire spectrum. One of the companies in that particular group might be interested in one little area of a problem, and information in optics, in the entire spectrum, would not be a great deal of help.

Mr. PERTCHUK. It is true that company could not obtain assistance through a grant under this program for the solution of its specific problem. I think that is true.

Mr. McGOWAN. This is one of the things I think that needs clarification.

How are you going to operate efficiently, with this kind of mechanism, when what we are trying to arrive at in information centers is dealing with the unique company that has a problem and getting the information to them?

The way it works now, would you be able to discuss with the company their particular problems?

Mr. PERTCHUK. Certainly. But you could not obtain a matching grant from the Federal Government for it.

Senator LAUSCHE. I think that is all.

Thank you very much.

Senator LAUSCHE. Thomas Marshall Hahn, president of the Virginia Polytechnic Institute.

STATEMENT OF THOMAS MARSHALL HAHN, PRESIDENT, VIRGINIA POLYTECHNIC INSTITUTE, FOR THE NATIONAL ASSOCIATION OF STATE UNIVERSITIES AND LAND-GRANT COLLEGES, WASHINGTON, D.C.; ACCOMPANIED BY DEAN C. BRICE RATCHFORD, UNIVERSITY OF MISSOURI; DEAN ROBERT N. FAIMAN, UNIVERSITY OF NEW HAMPSHIRE; DEAN D. MACK EASTON, UNIVERSITY OF COLORADO; AND CHRISTIAN K. ARNOLD, NATIONAL ASSOCIATION OF STATE UNIVERSITIES AND LAND-GRANT COLLEGES

Senator LAUSCHE. Mr. Hahn, we would be glad to hear you at this time.

Mr. HAHN. Thank you, Senator Lausche. I have a statement which you have and I would like to have it placed in the record and then comment briefly on this, summarizing.

I am Marshall Hahn, president of the Virginia Polytechnic Institute, which is Virginia's land-grant university. I am here today representing the National Association of State Universities and Land-Grant Colleges. With me, in case there are questions, are several other representatives of the association and I would like to introduce them.

On my left, Mr. Christian Arnold, with the office of the national association. On my immediate right, is Dean Brice Ratchford of the University of Missouri. On his right is Dr. Robert Faiman of the University of New Hampshire, and on the far right, Dr. Mack Easton, who is at the University of Colorado.

Senator LAUSCHE. If I am looking at you with a penetrating eye, I confess when I meet scientists and technologists, I always am fascinated to see what their contours are, especially those of the head.

Mr. HAHN. I am glad you specify which contours. [Laughter.]

The association I represent has a membership of 97 major State universities, major colleges and universities, of which all but two are public institutions. These are in each of the 50 States and in Puerto Rico. They have a total enrollment now of 1,400,000 students, which comprise about 28 percent of all of the college enrollment in this country. At the graduate level, approximately 55 percent of all of the doctorates are granted by the member institutions of the association. These institutions have for many years been strongly interested and concerned with the type of program the Department of Commerce hopes to establish under the State Technical Services Act. And we welcome the opportunity to comment on it briefly.

The interest of the institutions I represent stems from a long involvement in public service. In fact, perhaps this is best typified by the statement in the Morrill Act which created the system of land-grant institutions which said, "In order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life." That "practical education" has been an important element of the service of the public universities, and of course we view the type of services which could be organized under this act as a very practical, very desirable, and very necessary type of service. There has been a considerable experience on the part of these public universities in this type of activity.

As you know, it was first in the area of agriculture, as was appropriate, when in the early days of this country and in the early days of the organization of these institutions, most of our labor force was in the field of agriculture. The Hatch Act in 1887, and then the Smith-Lever Act in 1914, provided for this type of service, the type of service proposed under the State Technical Services Act, in the field of agriculture. And in fact the success of these efforts is best illustrated by the fact that 100 years ago nearly three-fourths of our labor force was engaged in providing our food and fiber needs. And today less than one-tenth of our labor force is so engaged.

Putting it another way, approximately the same number of farmers as were feeding 30 million citizens 100 years ago, now produce the food and fiber for 180 million citizens. In fact, it is our high efficiency of production in agriculture which has been made possible largely by the extension and experimentation programs of these public institutions which has freed so much of our labor force and which has enabled us to have the manufacturing strength the country now enjoys. It is this area to which this particular bill directs attention. And since about the turn of the century, as more and more of the labor force was freed from agriculture and engaged in industry, in manufacturing, these public institutions have been called upon to provide technical services to these industries beginning with the efforts of Ohio State, in Ohio, and with North Carolina State in North Carolina.

Senator LAUSCHE. I am sure that you are not mentioning Ohio State simply because I am presiding.

Mr. HAHN. I am glad you made that statement, Senator, but it is important to note that Ohio State was one of the first, and they have done a fine job. I might observe although we are delighted you are presiding, we did not know until shortly before this hearing that you would be presiding.

Senator LAUSCHE. I see. Thank you very much.

Mr. HAHN. In general most of these public universities are now providing, within the limit of the resources available to them, this service of communicating technology, interpreting technology, to industry, doing this at the request of industry, but we are limited by the level of resources available. And we are unable to meet all of the requests for this type of service.

At my own institution, both in our engineering experimentation and in our general extension programs, we provide a great deal of this service, but we cannot begin to meet the requests from industries of all types in our particular State. For a good many years we have been seeking Federal support to assist in providing the level of programs required to advance our industrial strength in order to strengthen the economy. And of course these efforts to this point have not been successful. There have recently developed several new factors which intensify these needs, the needs for this type of service.

First of all has been the tremendous growth in the amount of publicly supported research. The results from these research efforts, since they are publicly supported, certainly should be disseminated widely and effectively and should be utilized to advance the strength of our economy. This is being done in other countries. We are in a highly competitive work market, and such nations as West Germany and Japan are making good use of the research results and the growth in technology in those countries to strengthen the industries of those countries. So this service is needed to strengthen our own position in world trade. And with the literal explosion of knowledge produced by these research efforts, research activity has become a large-scale effort.

It is difficult these days for one- and two- and three-man research teams in a particular industrial organization to keep pace with the total developments in the fields of interest to that particular company. And so what is required, what is urgently needed, is an effective means of communicating and interpreting the very large amount of new information, scientific and technical, being generated by today's major research efforts.

The institutions I represent feel that they are in a particular strong position to assist in these efforts. The success they have already demonstrated in such efforts, within the limits of the resources available to them illustrates this. They have the competence in terms of the broad base of technical personnel in the scientific and engineering field. They have a flexibility in that there can be a shifting of assignment from instruction to extension activity or research activity, so in terms of this type of technical service, as the needs change, as research results flow, this flexibility can be present. However, there does need to be a continuity.

In other words, this cannot be done simply by grants, because you do not have the long-range base built in for planning. And the Tech-

nical Services Act would provide this type of continuity, at the same time the institutions could provide the flexibility and the economy and efficiency, and the competence, and there would be preserved the appropriate elements of the local control.

Now looking specifically at the proposed bill, of course no bill will be deemed entirely satisfactory to all groups. But as long as 2 years ago, representatives of the association I represent served on a task force, with the Department of Commerce, to help identify and plan the elements which would be most satisfactory and most productive. For a year and a half the association has maintained a special committee to advise and consult with the Department of Commerce, as thinking has gone into this proposed bill. So we feel it is an excellent bill and we endorse it strongly.

We would propose one possible perfecting amendment. We believe it was the intent of the bill to describe as the "designated institution," that is the institution in each State which would administer and co-ordinate the program, as an institution which fell within the category of the qualified institutions. In the language of the bill, the designated institution is the administering institution or agency. And then there is separately described the qualifying institution. We believe it was the intent that the designated institution be a qualified institution. So we would like to suggest, as a possible perfecting amendment, and this does appear in the prepared testimony, that paragraph (b) of section 2—this is on page 8 of the prepared testimony in the middle of the second paragraph—you will note there the sentence:

We suggest, therefore, that paragraph (b) of section 2, on page 3 be revised to read, "Designated institution" means a qualified institution or agency in each participating State, which has been designated as administrator of the program * * *: and that the first sentence of section 3 on page 4 be revised to read, "Any State which wishes to receive Federal payments under this Act in support of its existing or planned technical services program shall designate under appropriate State laws and regulations, a qualified institution or agency to administer and coordinate that program and to prepare and submit plans and programs to the Secretary of Commerce for approval under this Act."

We believe it was the intent to indicate that a designated institution would be selected from the qualified institutions and we believe this perfecting amendment might clarify that.

In general we warmly support and endorse this bill. You can be assured that the institutions I represent, the 97 member institutions of the National Association of State Universities & Land-Grant Colleges, will continue to do all within their resources that they can to provide these badly needed services. But with this bill it would then be possible for us to do all within our competence.

Thank you.

(The complete text follows:)

TESTIMONY ON BEHALF OF THE NATIONAL ASSOCIATION OF STATE UNIVERSITIES & LAND-GRANT COLLEGES BY T. MARSHALL HAHN, PRESIDENT OF VIRGINIA POLYTECHNIC INSTITUTE

Mr. Chairman and members of the committee, I am T. Marshall Hahn, president of Virginia Polytechnic Institute. I am here today to present testimony on behalf of the State Technical Services Act of 1965, on behalf of the National Association of State Universities & Land-Grant Colleges. This association has a membership of 97 major universities and colleges, at least one of which is located in each State and Puerto Rico. Of the total membership, all but two are publicly controlled institutions. As of last fall, these institutions had a combined enroll-

ment of 1,400,000 students, which is about 28 percent of the total enrollment in all American institutions of higher education. At the graduate level, they grant more than 55 percent of all doctoral degrees.

BACKGROUND OF INTEREST OF ASSOCIATION

The institutions I represent here today have, for many years, been interested in and concerned about the type of program the Department of Commerce hopes to organize under the Technical Services Act of 1965. We very much appreciate therefore this opportunity to discuss with the members of this committee the proposed legislation.

Our interest in this type of program stems basically from the early acceptance by America's public universities of the ideal of faithful service to the needs of their communities and the Nation. It is in this insistence on the ideal of service that we can understand Justin Morrill's inclusion of the word "practical" in the famous phrase that he wrote into the act that established the land-grant institutions over 100 years ago: "* * * in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life." The public universities were to be useful institutions—useful to the people, to the several States, and to the Nation.

That this concept of usefulness was to be extended beyond the campus and the classic disciplines—that the ivy curtain between town and gown was to be torn down—was seen early in pioneering programs for agricultural research and extension. This priority was a logical choice for a country in which some three-fourths of the people were engaged in farming. The pioneering attempts of individual professors and individual institutions were formalized on a national level in 1887 with the passage of the Hatch Act for agricultural research and in 1914 with the passage of the Smith-Lever Act for agricultural extension.

I'm sure I don't need to dwell on the effect of these programs on the economy and life of our country before this committee. By any measure, they furnish one of the greatest success stories of all times. Of all the details that could be cited in support of this statement, one seems to me to summarize all the others: our farm population today totals just about the same as it did 100 years ago. In 1863, those farmers fed a population of a little more than 30 million people. Today, they feed about 180 million—six times as many—well enough to make weight control a necessary national preoccupation. Evaluated solely in the release of productive energies for other pursuits, these programs surely add up to the best investment our country ever made. It also adds up to a measurable increase in productive efficiency greater than that achieved in other areas of the American economy.

The public institutions early attempted to extend these types of programs and services to other important areas of the national economy, and especially to those areas involving engineering and the industrial arts, within the limits of the available resources. By 1914, 12 of these institutions had established engineering experiment stations and engineering extension services had been organized in many of them on an informal basis, as no funds were available. In 1905, as a result of insistent requests from small manufacturers for help, the first of several unsuccessful attempts to obtain Federal help for such programs was made with the McKinley bill calling for engineering experiment stations following the pattern of the Hatch Act.

Despite inadequate financing, these early attempts produced important results. Starting as early as 1894, a ceramic industry was started in Ohio as a result of pioneering efforts by Ohio State. North Carolina State achieved the same results a few years later in North Carolina. Penn State had organized industrial extension programs by 1907, including public relations for industrial employees and industrial economics for company officials.

Efforts to obtain Federal help continued through the Newlands bill in 1916; the Smith-Howard bill in 1917; the McNary bill in 1929; the Arentz and Haugen bills in the 1930's; and bills by Representative Green, Senator Mead, and others in the 1940's. Throughout the debates on these attempts, everyone agreed to the need, which was well expressed in 1950 by H. Thomas Hallowell, then vice president, now president of the Standard Pressed Steel Co., of Jenkintown, Pa. Mr. Hallowell said: "Programs such as the ones offered by the land-grant colleges and universities can help industry improve its competitive position by improving its ability to produce. This ability to produce is industry's one control of inflation. Such training programs can improve the living standards and increase the security of the workers, because a trained man is much more secure than one who

is not. In this way, our country as a whole will be benefited, and our position in world competition will also be strengthened." Despite the almost universal agreement of need, no action was taken, for reasons that had nothing to do with either the need or the value of the legislation. The success of the programs in agriculture gives some hint of the progress that might have been made if one of them had been enacted into law.

NEED FOR PROGRAM IS INCREASING

There are several new factors intensifying the need for the Technical Services Act of 1965. First is the tremendous quantity of publicly supported research, which is producing findings that can be of value to the civilian segment of the economy. Since this research is supported with public funds, the benefits should be widely disseminated throughout the economy. Very few of the results of the publicly supported research can be picked up and applied directly by an industry or a company. Much basic research must be analyzed and interpreted in terms of its potential to help solve problems of industry and increase profits, and then a conscious effort made to get this information into the hands of all the firms that can use it. It has been the translation of basic research information into problem-solving and profitmaking suggestions that has accounted for the success of extension in the field of agriculture. The same results can be expected in industry and business.

Second, American products must increasingly compete in domestic and world markets with products from foreign countries. West Germany, Japan, and several other countries have a highly advanced technological society and are spending large sums of money to insure continued top technological performance. A very modest expenditure to help increase the level of technology of the American civilian economy will enable the American industry to compete more effectively with foreign products, and this will have many beneficial effects in terms of increased employment and improved balance of payments.

Third, research and development have increasingly gone large scale. The day of the one- or two-man laboratories has passed. Today only the largest firms can afford an adequate research and development program. The university can perform for industry the same research and development function they have performed so effectively for agriculture.

THE UNIVERSITIES HAVE THE CAPABILITY TO HANDLE THE PROGRAM

The universities are in a better position to take on this important assignment than ever before. Over the years, the universities have gradually intensified their relationships with the professions and industry, and at an increasing rate in the last few years. Most of our member institutions have continuing extension programs in either engineering and technology, or in business management, and many have programs in both. All of our institutions have expressed an interest, and feel there is a need for sharply expanded extension programs in these fields, and are ready to move forward, as funds become available.

THE WORK DONE HAS BROUGHT SUCCESS

The existing programs have yielded hundreds of examples showing how entire industries and individual firms have been assisted in expanding, solving problems, and in increasing profits through educational programs. While the existing programs are accomplishing much, they are seriously inadequate. A few of the schools have modest State appropriations, but some schools depend entirely, and others in large part, on grants, contracts, and fees from educational activities. The problem with programs financed entirely or in large part through contracts, industry grants, and fees is that they often do not reach industries, firms, and individuals who are most in need of educational help. Usually those who in an absolute sense need assistance less recognize the need for keeping up to date and are willing to pay for it.

The second difficulty with such programs is their uncertainty. It has been demonstrated time and time again in a number of fields that educational programs, in order to be successful, must be continuous. They cannot be turned on and off, either from the standpoint of acquiring adequate staffs for teaching, or from the standpoint of the clientele being trained. This difficulty is also inherent in grants which run from 1 to 3 years. It is simply impossible to employ competent staffs who intend to make a career of continuing education, unless there

is a continuing and firm base of support. The Federal support, plus matching local appropriations, would provide the solid base necessary for developing a significant and meaningful program.

Several of our member institutions have representatives here today. They can tell of work underway in their States and work that is planned if this act is passed. The institutions represented here are typical.

THE PROPOSED PROGRAM WILL HAVE MAXIMUM LOCAL CONTROL

By virtue of the funds provided under this act being channeled through colleges and universities, it is assured that the program will be largely locally controlled. Within the broad framework of the act colleges and universities which are qualified to participate are free to develop with the industry which is important in their area programs of value and significance. The integrity of the institutions is in no way impaired or compromised. Most universities now have advisory committees for their several extension programs. Also, it is the first principle of successful extension work that programs be directed to solving recognized and felt problems. The combination of university sovereignty, local advisory committees, and involvement of the industries in planning programs that will affect them provide the necessary safeguards for not only keeping the program locally based and controlled, but also sound and in the public interest.

UNIVERSITIES HAVE MANY TYPES OF SPECIALISTS TO USE IN THIS PROGRAM

An effective educational program to increase the level of technology will require people from several fields. In addition to different types of technologists, management specialists must be fully involved. Management of a firm may not need to know the details of new technology but it must understand what it will do for the firm and the method of making use of the technology at minimum costs and for maximum benefit. Our universities have demonstrated the value of using both technologists and management specialists in working with a single industry.

The types of technological and management personnel needed varies from industry to industry. The universities have many different kinds of specialists on the faculty. Increasingly faculty members have appointments which provide for spending part time at teaching and part time at either organized research or extension work, or both. These arrangements often vary from year to year or may even be changed during the year. This provides the flexibility for the university to assemble whatever team of specialists is needed for a particular program for as long as they are needed. Of course, this potential flexibility becomes a reality only when there are funds to pay for all the work and when the availability of the funds is sufficiently certain to permit advanced planning.

SPECIFIC COMMENTS ON THE ACT

Representatives of our association served on a task force which was assembled by the Department of Commerce 2 years ago, to begin exploring the idea of a Technical Services Act. Our association has had its own committee for the last year and a half to advise with the Department of Commerce on the design of this program. Many of the suggestions which we have offered have been included in the act. While no bill is ever entirely satisfactory to one group, we think it is an excellent act and in the interest of the national economy and the universities and should be passed.

We have one specific suggestion for what we consider to be a "perfecting amendment" that we think clarifies the intent of the act. It is the intent, we believe, that the institutions designated to plan the State programs and administer them are to be selected from among qualified institutions, as defined in the act. The act, however, nowhere says this. We suggest, therefore, that paragraph (b) of section 2 on page 3 be revised to read, "'Designated institution' means a qualified institution or agency in each participating State, which has been designated as administrator of the program * * *"; and that the first sentence of section 3 on page 4 be revised to read, "Any State which wishes to receive Federal payments under this Act in support of its existing or planned technical services program shall designate under appropriate State laws and regulations, a qualified institution or agency to administer and coordinate that program and to prepare and submit plans and programs to the Secretary of Commerce for approval under this Act."

There are several features in the act which have particular merit. It is so written that all of the institutions of higher education which have real competence to assist industry can participate in the program. At the same time, it provides a framework for administration within the State, which will avoid duplication and should pool the knowledge resources of the State toward the common objective of improving the level of technology of industry in the State.

Another outstanding feature is permitting institutions in more than one State to cooperate and have their allocation of funds increased by 10 percent. In many parts of the country, it will be desirable for institutions of higher education in two or more States to cooperate, and this act provides an excellent incentive for them to do so.

While the majority of the fund will be allocated under a formula to be developed by the Secretary of Commerce, 20 percent of the total appropriation is reserved for the Secretary to make grants for experimental and national programs. This provides flexibility, while at the same time, providing a strong continuing base of support for the colleges and universities.

We urge you to pass this act and fund it. The universities I represent will continue to do all they can within the limits of their resources. They ask your support for this program so they can change this to read "within the limits of their competence with adequate resources."

Senator LAUSCHE. Do any of your associates desire to give additional testimony?

Mr. HAHN. Only if you have specific questions, Senator.

Senator LAUSCHE. Is it your judgment that this newly created agency should be confined to the dissemination of scientific knowledge and not be vested with authority to do research and development?

Mr. HAHN. Yes, sir.

Senator LAUSCHE. Do you feel that the bill as now written does not provide for special consultative service on scientific matters?

Mr. HAHN. Within the limit of matching funds; yes, sir.

Senator LAUSCHE. Are you of the opinion that we should be careful not to invade the field of private scientific activity through the adoption of services by this program that normally are rendered by private consultants and engineers?

Mr. HAHN. Very much so. In fact I would observe that this service would undoubtedly increase the amount of activity in these private consulting activities. The dissemination of the information which would be possible under the Technical Service Act would generate stronger industrial interest, and I would envision these centers referring specific questions to consulting firms and organizations.

Senator LAUSCHE. I notice that you emphasize the need of creating in industry and business a Federal scientific information service comparable to that which has been rendered in the last 75 or 100 years to agriculture. Is that the predicate of why you feel that we ought to enter this field?

Mr. HAHN. Yes, sir. It would seem to me that we are discussing here an area of vital national interest, and the areas of information required which will of course differ from region to region across the Nation. It is in the national interest and therefore it is a very appropriate area for national investment and at the same time you have an input of the local competence and control, so that it should be possible to achieve the same level of result as has been possible through this cooperative effort in the extension activities in the field of agriculture.

Senator LAUSCHE. Will you repeat those figures comparing the number of workers on the farm now needed to supply food for 192

million people with those needed to produce food for America a century ago?

Mr. HAHN. Yes, sir. Taking the past century, there are three very interesting ways in which this can be expressed. A century ago our population was approximately 30 million. As you say, currently it is 192 million. And approximately the same number of farmers as were required a century ago still provide the food and fiber for six times the population. Another way to express it, a century ago we had almost three-fourths of our labor force on the farm producing our food and fiber needs. And today we have less than one-tenth of our labor force producing our food and fiber needs. There is a third way to express this, 100 years ago 1 farmer could produce the food and fiber needs for 5 persons, today 1 farmer can produce the food and fiber needs for approximately 27 persons.

As a matter of fact, this is the principal ingredient in the success of our industrial economy because we can release most of our labor force for the manufacture of automobiles, television sets, Gemini space vehicles, and all of the other ingredients for our high standards of living.

Senator LAUSCHE. And it is your belief that the supply of information to the farmer enabling him to improve the productivity of the land can in principle be applied to industry and business, and that therefore this program is sound?

Mr. HAHN. Emphatically, yes.

Senator LAUSCHE. Do any of your associates want to say anything at this time?

Mr. RATCHFORD. I am Dean Ratchford, of the University of Missouri. I might add a comment on one question you raised, and this is in relation to professional engineers or private consultive services.

We surveyed all of our member institutions and asked them if this bill became law what are some of the things you would want to do. One of the cliental groups that was identified almost universally as a group which would be given priority in technical assistance, are people in private consulting business, recognizing that if they are up to date, then they are more effective in their consulting. Also one of the major activities most of them planned is to work out a very effective referral service.

Many of the small firms, the ones who need the help the most, have no idea of what sort of consultive services are needed, or if they do, the sources of them. So these are two of the things that are very high in the thinking of our member institutions.

Senator LAUSCHE. You concur with the views expressed by Mr. Hahn, that if anything the establishment of this service will expand the available field of work for the private consultant engineer and scientist?

Mr. RATCHFORD. Oh, I think we can demonstrate this being the case. Where we have started from scratch with an industry, and worked with them, for the first time consultants have business in this field. So I think we can demonstrate that this is a fact, not an opinion.

Senator LAUSCHE. Thank you very much.

Mr. Donald E. Marlowe.

**STATEMENT OF DONALD E. MARLOWE, DEAN OF ENGINEERING
AND ARCHITECTURE, CATHOLIC UNIVERSITY, AND CHAIRMAN,
LEGISLATIVE AND GOVERNMENT AFFAIRS COMMITTEE, NA-
TIONAL SOCIETY OF PROFESSIONAL ENGINEERS**

Senator LAUSCHE. Mr. Marlowe, your complete statement will be printed in the record and I would suggest you try to summarize it, hitting the highlights. You have heard the discussions here, you have heard what I think are important aspects of it.

Mr. MARLOWE. I will do this, Mr. Chairman. You have our printed statement and I will attempt to note one or two primary elements in our statement. Because this will be brief, I would like to begin by saying that the National Society of Professional Engineers is particularly interested in this program, because of its potential grave impact on the engineering profession, and since we will be suggesting some minor changes, I would like to emphasize the fact that we do support the program, although our abbreviated testimony will necessarily center on a couple of changes we would like to see made in it.

We believe that the program will be of great benefit to industry, great benefit to the engineering profession, and of great benefit to society as a whole.

On the other hand, we are recommending the adoption of certain clarifying language to assure that the bill will fulfill its intended information dissemination purposes, and not be used as an authority for Government-financed competition with private firms and individuals.

We recommend that the phrase "technical services" where it appears throughout the bill, including the title, be amended to read "information services." While this is basically a change in form and not in substance, we believe that it is very important and would help materially to insure correct interpretation and application of the bill's provisions.

Since the phrase "technical information" more accurately describes what is intended, we urge it be used and this will help avoid the danger of the bill being misinterpreted, to put the Government in direct competition with engineers in private practice.

Section 5(e) states that the Secretary of Commerce shall not accept an annual program for approval unless the administering institution has determined that the program does not provide a service performed as practicably by private technical services, professional consultants, or private institutions.

We would recommend this language be changed and thus avoiding certain difficulties, if it were changed to read that the Secretary has determined that the program does not provide a service available from private technical services, professional consultants, or private institutions.

With the committee's permission, we are submitting a list of proposed amendments as the final page of our statement, proposed changes which I shall not detail here. But I can give the general flavor of them by saying that we wish the committee to recognize that there is now a private industry operating effectively in the area of the application of advanced scientific and technical information to the problems of industry.

This service is performed by the private consulting engineer.

We also recognize the fact that there are segments of the economy which are not being reached by the services available by the private engineer for financial or failure of information dissemination reasons.

Senator LAUSCHE. I think we have one in Ohio, the Batelle Institute, that makes available information?

Mr. MARLOWE. Yes, sir. But we recognize that there are segments of the economy which these services, and that of the private consulting engineering firms, do not reach. We think this bill will help to improve the technological capability of these industries. And so we are arguing primarily that in setting up the technical information services under this bill, that due care be taken that it not interfere with the legitimate privately developed and privately operating technological services which are now available from that segment of the engineering profession which is engaged in private practice.

Senator LAUSCHE. To those thoughts I fully subscribe, I want to assure you. The Secretary of Commerce, when he testified, emphasized the fact that it was not the purpose of the bill to have the Federal Government enter into a field of service that is adequately provided by private business and enterprise.

Mr. MARLOWE. Yes, sir. We believe if the technical information services of this act are given sufficient emphasis, that that will be achieved.

Senator LAUSCHE. Thank you very much.

(The full text of Donald E. Marlowe's statement follows:)

TESTIMONY OF DONALD E. MARLOWE, DEAN OF ENGINEERING AND ARCHITECTURE, CATHOLIC UNIVERSITY, AND CHAIRMAN, LEGISLATIVE AND GOVERNMENT AFFAIRS COMMITTEE, NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

Mr. Chairman and members of the committee, I greatly appreciate the opportunity to present the views of the National Society of Professional Engineers on S. 949, the proposed "State Technical Services Act of 1965."

My name is Donald E. Marlowe. I am dean of engineering and architecture at Catholic University, a registered professional engineer, and chairman of the Legislative and Government Affairs Committee of the National Society of Professional Engineers.

Our society is composed of more than 63,000 members, all of whom are qualified under applicable State engineering registration laws. The society's membership is affiliated through 53 State and territorial societies, and more than 450 local chapters.

We are particularly interested in the program proposed in S. 949 because of its potentially great impact on the entire engineering profession. As a technical information dissemination program—which is what we have been told by administration officials is intended—we believe it would be of great benefit to industry, to the engineering profession, and to our society as a whole. However, if administered to provide federally subsidized technical or engineering services in direct competition with private firms or individuals, we believe the program would be highly detrimental, not only to the engineering profession but to the entire system of American enterprise intended to be helped by the bill.

Our society's views on this legislation can best be understood by reference to a policy statement approved by our executive committee on April 7, 1965, dealing with Federal assistance to States for engineering information dissemination programs. That policy statement reads:

"The National Society of Professional Engineers endorses legislation and other activities designed to stimulate and assist the dissemination of current engineering information to industry through State educational institutions and other sources at the State or local level.

"Federal assistance to the States for this purpose will serve to stimulate the economy and the efficient use of engineering technology and will be to the benefit of the general public through higher levels of employment, improved standards of living, and more efficient production for a competitive position in world markets.

"Legislation to accomplish this purpose should insure that the Federal Government, through its financial assistance does not support engineering research or provide services to proprietary interests. Engineering information gathered and disseminated under the program should be made available to the general public and industry on a broad and general basis. An advisory council, including representation from the engineering profession, and industry, should be established at each level of operation of the program to monitor it for policy guidance and general direction."

Measuring the provisions and stated purpose of S. 949 against these general principles, the National Society of Professional Engineers endorses the bill and supports its enactment. We strongly urge adoption of certain clarifying language, however, to assure that the bill will fulfill its intended information purposes and not be used as authority for Government-financed competition with private firms and individuals.

TECHNICAL SERVICES

We recommend that the phrase "technical services," where it appears throughout the bill, including the title set forth in section 19, be amended to read "information services." While this is basically a change in form and not in substance, we believe it is very important and would help materially to assure the correct interpretation and application of the bill's provisions.

"Technical services" are defined in section 2 of the bill as "activities or programs designed to enable business and industries to acquire and use scientific and engineering information effectively" through various designated means. The emphasis throughout the bill itself is on the dissemination of information. Even the preface to the bill states that its purpose is to promote economic growth by supporting State and regional centers to place the findings of science usefully in the hands of American enterprise. The use of the term "technical services," then, introduces an ambiguity which we feel is dangerous. Technical services, in its common meaning, implies services such as those rendered by professional engineers and other technical people in private practice.

Since the phrase "technical information" more accurately describes what is intended, we urge that it be used instead. This will help avoid the danger of the bill's being misinterpreted to put the Government in direct competition with engineers in private practice.

SECTION 5 (E)

We recommend, too, that section 5(e) be amended to eliminate several similar ambiguities. That section now provides that the Secretary of Commerce shall not accept an annual program for approval unless it is certified that the administering institution has "determined that such * * * program does not provide a service performed as practicably by private technical services, professional consultants, or private institutions." This language is a highly important part of the bill. It constitutes the only specific safeguard against possible use of the legislation as authority for providing services in competition with private firms or individuals. Yet the limiting phrase "as practicably" is so subjective, and subject to such broad interpretation that it would give the administrator in each State almost complete and unlimited discretion in applying or not applying the entire section in any given case. While some discretion is necessary in the administration of any legislative program, we believe that "as practicably" is far too broad, and that a different standard should be provided.

Another ambiguity in section 5(e) is created by use of the word "performed." This word apparently would include services which have been performed, or which are being performed, but it would seem to exclude services which may be performed. Since there are many services which are not actually being performed by private firms or individuals today, but which readily can be, when the need arises, we feel the word "performed" should be eliminated from the bill. Otherwise, it could result in the development of Government-financed competition with professional engineers in private practice.

Both of these potential problems created by the phrase "performed as practically" could be avoided, we believe, by changing section 5(e) to read: "determined that such program does not provide a service available from private technical services, professional consultants or private institutions."

Sections 5(f) and 2(a) (2)

The other amendments our society feels are necessary relate to section 5(f) and section 2(a) (2) of the bill.

Section 5(f) requires that when an annual program is submitted for approval the State certify that the administering institution has "planned no service specially related to a particular firm or company except insofar as the services are of general concern to the community, State, or region." We fully support the portion of this section prohibiting services specially related to a particular firm or company. However, we feel the exception which follows is so broad that it weakens the prohibition almost to the point of destroying it. Practically all technical information services—whether they are specially related to a particular firm or not—can be held to be of general concern to a community. We recommend that this exception be dropped, and that section 5(f) simply require the State to certify that it has "planned no services specially related to a particular firm or company, public work, or other capital project." We suggest that "public work or other capital project" be included so that the section will conform to other provisions in the bill limiting services to businesses and industries.

Finally, we recommend that subsection 2(a)(2) be reworded to clarify its meaning and thereby reduce the possibility of its being interpreted as authorizing services in competition with private firms and individuals. We suggest that this part of the definition of technical services—or, to use our recommended language, "information services"—be revised to read: "establishing State or regional technical information centers to prepare and disseminate reports, abstracts, computer tapes, microfilms, reviews, and similar scientific and engineering information." This change, we believe, would make the meaning of the subsection clearer, and bring its language into greater conformity with the other parts of section 2(a).

In brief summary, Mr. Chairman, the National Society of Professional Engineers supports enactment of S. 949, but urgently recommends adoption of the clarifying amendments we have proposed here to help assure that the legislation achieves its intended purpose. With these amendments we think this would be an excellent bill, and one which recognized and protected the diverse interests involved, while helping to provide industry with the scientific and technological information it must have if our economy is to prosper and grow.

We appreciate this opportunity to present our views on this important legislation, and will be happy to furnish any additional information or comment the committee may desire.

With the committee's permission, I would like to submit for the record, and for the committee's convenience, a 1-page attachment to this statement listing the specific amendments we have proposed.

AMENDMENTS TO S. 949 PROPOSED BY THE NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

1. Substitute "technical information" for "technical services" throughout the bill as follows:

Page 2, lines 5, 11, 15; page 4, lines 10, 21; page 5, line 22; page 6, lines 11, 16, 24; page 7, line 7; page 8, lines 13, 18; page 9, line 6; page 10, lines 10, 20; page 11, lines 3, 12, 13; page 12, line 25; page 13, line 12; page 14, lines 8, 9.

2. Amend section 5(a) to read: "(e) determined that such program does not provide a service available from private technical services, professional consultants, or private institutions."

3. Amend section 5(f) to read: "(f) planned no services specially related to a particular firm or company, public work, or capital project."

4. Amend subsection 2(a)(2) to read: "(2) establishing State or regional technical information centers to prepare and disseminate reports, abstracts, computer tapes, microfilms, reviews, and similar scientific and engineering information."

Senator LAUSCHE. Mr. Chope, of Industrial Nucleonics Corp.

**STATEMENT OF HENRY R. CHOPE, EXECUTIVE VICE PRESIDENT,
INDUSTRIAL NUCLEONICS CORP., COLUMBUS, OHIO**

Senator LAUSCHE. Mr. Chope, I welcome you here. It is especially good to have you here today because I understand you are one of the individuals who has long been advocating a service of this type.

Mr. CHOPE. Yes, sir.

Senator LAUSCHE. Your complete statement will be placed in the record. I think that you can summarize your thoughts concerning this bill without reading the statement.

Mr. CHOPE. Yes, Senator Lausche, I would prefer doing it that way.

My name is Henry R. Chope. I am a founder and vice president of the Industrial Nucleonics Corp., in Columbus, Ohio.

I would like to make several comments about the State Technical Services Act, as it pertains to a small growing technically based company. In summarizing my paper, I would like to emphasize just three points.

First, that the proper operation of programs under the State Technical Services Act could have a beneficial effect on small growing technically based companies, especially those not primarily in the defense-based business.

Second, there is a vital need in certain regions of this country for more technologically based companies.

Third, I would like to emphasize that industrial and commercial benefits do not come automatically, as a result of expenditures for science and technology and other fields, such as defense and space.

There must be a planned, logical, lucid translation of science and technology into industry and commerce, if there is to be the greatest payoff from the benefits of science and technology.

Now, an item of concern to many of us who work on the industrial side of technology is this: At the end of World War II there were certain developed technologies that had immediate and obvious applications to industry and commerce.

To name four of these: nucleonics, servomechanisms, microwave techniques, and jet propulsion.

Each of these had immediate application to industry or commerce and industries were built up around each of these four technologies.

Yet today we are spending something like \$16 billion a year on federally supported research and development. We have spent already something like \$50 billion a year on the missile program. Yet it is hard to find a single new technology that is clearly defined that would rank with any one of these above.

Nevertheless, practical economic benefits from science and technology are possible. This is reflected in the experience of my own company. My own company was formed in 1950, 15 years ago, to merge together two of these war-developed technologies, nucleonics and servomechanisms.

We have planned these technologies to industrial measurement and control and today the nucleonics control systems are used in virtually all basic raw-material-processing industries, such as steel, rubber, paper, plastic, and the chemical industry.

There has been a considerable benefit to our economy through the use of these systems. First, we have, over a period of 15 years, ex-

tended the development of these two technologies, and spent approximately \$14 million on research and development.

American industry has purchased about \$100 million worth of these systems. But the benefit to the American economy of these radioisotope or nucleonic systems has been estimated by Dr. Willard Libby, former AEC Commissioner, as about a half-billion dollars a year.

Senator LAUSCHE. Will you suspend for a moment? I have to make a call. Excuse me.

(Short recess.)

Senator LAUSCHE. I was hoping to finish this at the noon hour, without recessing. What time are you scheduled to leave, Mr. Chope?

Mr. CHOPE. I will be in the city all day.

Senator LAUSCHE. And Mr. Webber, what about you? Have you any special time arranged for departure?

Mr. WEBBER. Yes, sir. At 4 p.m.

Senator LAUSCHE. By plane?

Mr. WEBBER. Yes, sir.

Senator LAUSCHE. I think if we can come back at 2 o'clock, we can get through. You would be in time and we won't have to hurry.

We will recess until 2 o'clock.

(Whereupon, at 12:10 p.m., the hearing was recessed, to reconvene at 2 p.m. of the same day.)

AFTERNOON SESSION

Senator BREWSTER. The committee will come to order. We will continue the hearings on S. 949.

I believe Mr. Henry R. Chope was in the midst of his testimony when we concluded the hearing this morning.

Mr. Chope, will you please continue at the point where you left off.

Mr. CHOPE. I was at the point where I was listing the three vital ingredients necessary to the growth of a technologically based company. I am talking about the type of company that derives its main income from nonmilitary or space business, and I have gone into some detail as to these ingredients in my paper.

I will list them here: First you need one or more basic technologies that have been brought to some point of perfection. Second, a vital ingredient, is some interested center of technology that can and will make available advanced technology, and perhaps actually work with local industries in the dissemination of this technology.

A third ingredient, of course peculiar to the business and there is nothing that the Government can do about this, you require inventors, entrepreneurs who are willing to take the risk to go into business, to spend money on further new product development, and the marketing of that product.

I feel that the Technical Services Act would supply in part these ingredients 1 and 2, that is, they would catalog certain of the basic technologies; and second, provide a minimum as a center for disseminating this technology.

There is certainly a need in many sections of the country for the creation of new products and processes and hence new businesses. The need is particularly great in the five Great Lakes States of Ohio, Indiana, Pennsylvania, Illinois, and Michigan.

These are States which have historically depended strongly upon the heavy industries. They have been strong in metals, rubber, ceramics, the automotive industry.

In the last 10 years there has been a job shrinkage of some 900,000 jobs in just these five States. The shrinkage has been partly offset by employment in nonmanufacturing industries, but this has not been really enough. There has been the need, and continues to be a need, for greater injection of more scientific-based companies.

In summary, I can say I am in favor of the State Technical Services Act. No act or bill is going to be a panacea for all ills of business for our economy, and no bill is going to accomplish what businessmen must accomplish for themselves, to decide to invest the money, to carry on the further and complete development of a technology into products.

I think that the Technical Services Act properly applied can provide a useful input and stimulus to new technologically based companies getting started.

Thank you.

Senator BREWSTER. Does that conclude your statement?

Mr. CHOPE. Yes, sir.

Senator BREWSTER. Thank you very much, sir, for your testimony. The committee will certainly consider it very carefully.

(Statement of prepared text follows:)

TESTIMONY ON STATE TECHNICAL SERVICES ACT OF 1965, BY HARRY R. CHOPE, EXECUTIVE VICE PRESIDENT, INDUSTRIAL NUCLEONICS CORP., COLUMBUS, OHIO

General

There is an increasing awareness today that the great amount of research and development that has been marshaled for military and space purposes could, if properly redirected, benefit our Nation's economy and our free enterprise system. Today there can well be concern about the lack of conversion of the vast amount of federally supported research and development into useful commercial and industrial products.

Research expenditures in this country are approaching \$21 billion per year. Of this amount, about \$16 billion is supported or controlled by the Government. Yet such large expenditures for specialized research and development in support of national defense and space missions have not met the full range of industrial needs in terms of new technologies, new processes, new products, and resulting new jobs.

The condition of relevant technology existing now may be contrasted to that existing at the end of World War II. At that time, there were certain well-established, defined, and recognized technologies which had been developed in connection with the World War II effort. Four such technologies could be listed:

1. Nucleonics—The application of nuclear science for both large and small sources of power.
2. Servomechanisms and automatic control techniques.
3. Microwave techniques and devices.
4. Jet propulsion.

These four technologies presented potential for immediate applications in industry and commerce. Yet in spite of the some \$16 billion per year being spent for Federal research and development and in spite of the some \$50 billion which has been spent on our missile program, one is hard pressed to define one single technology coming out of these efforts which would rank with any one of these four World War II technologies. Certainly, high-level scientific work is being done. It is being reported. All too often, however, its results are stored away in various repositories after the primary mission of the work has been served.

Somehow a proper balance must be struck between our vast expenditures for research and development directed toward defense and space programs and the commercial and industrial needs of our country.

The need for applying our technical resources at the national and regional levels

Underlying our continuing economic health is the need for new products, services, and processes. New products and processes are not being introduced at a sufficient rate to meet the needs of our expanding society. But today, new products depend upon the successful applications of new technologies. New products not only provide the basis for continuing employment in existing companies, they cause the creation of entirely new businesses and industries.

There is a need in various parts of this country for the creation of new businesses. This need is particularly great among the five Great Lakes industrial States which include Ohio, Michigan, Pennsylvania, Illinois, and Indiana. Historically, the major manufacturing centers of this country have been found in these States. These manufacturing centers produce steel, machinery, automobiles, aircraft, and automobile parts, and rubber and metal products. In fact, these particular States lead the Nation in employment in such industries. But there has been in this industrial area a grave pattern of long-range shrinkage of manufacturing employment. During a 10-year period (1953-63), for example, factory employment in each of these States dropped from 10 to 20 percent, with the average being 15 percent for the group. By comparison, the corresponding figure for the Nation as a whole was only 3 percent.¹

According to statistics from the Ohio Bureau of Unemployment Compensation, over the decade these five Great Lakes industrial States lost more than 900,000 jobs in manufacturing, largely in durable goods. This long-range attrition in manufacturing employment has been partly offset by a rise in non-manufacturing employment. However, there simply has not been enough influx of new businesses to make up for the shrinkage in manufacturing in these areas.

A matter that is quite close home to me is the gradual attrition of employment of the 19 leading manufacturing concerns in Columbus, Ohio. Manufacturing in Columbus has been characterized as consisting of some of the older, more established operations such as steel castings, bearings, construction machinery, and railroad equipment. When the employment figures over a 10-year period of the leading 19 manufacturers in this city are examined, the record shows that there has been a net loss of over 10,000 jobs. Thus, there is a continuing need, at least throughout the Midwest, for much greater injection of new technologically based industries.

In world markets, American manufacturers are finding increasing difficulties. The economies of many Western nations are booming. Further, they are competing quite effectively in the world market. This high degree of efficiency is in many industries, such as steel, due to the adaptation of the most modern equipment and technology. When Japanese steelmakers can purchase iron ore in Utah, ship it to Japan, process and roll it into sheet steel, and sell that steel strip in the United States in competition with our own domestic steel, then our production efficiencies are in some trouble. In my viewpoint, there are fertile areas for applying our best technology to create not only new products and processes, but to establish more efficient production methods so as to enhance our relative position in world trade.

The State Technical Services Act

Based on what I feel is a real need, I am testifying in favor of the State Technical Services Act of 1965. Its initiation is a reasonable and proper activity for the Federal Government. Certainly during an era in which the Federal Government is spending some \$16 billion for R. & D., initial exploratory costs on the order of \$5 to \$10 million per year would seem to be a reasonable amount if there is any possibility at all of translating some of this vast defense and space technology into commercial and industrial products and activities.

Certainly no act or bill is a panacea or cure-all. No bill of this type is going to accomplish what ultimately business must do for itself. This act could provide, however, a useful input in helping out small, growing, technologically based organizations.

My comments are based upon my own experience during the last 15 years in applying two wartime technologies (nucleonics and servomechanism controls) to industrial applications. I have tried to review in my own mind some of the factors which over the years have aided the growth of my organization. Then, in turn, I have weighed these factors against some of the provisions of the State Technical Services Act. In doing this, I have attempted to visualize how the

¹ "Factors Limiting Manpower Research for States and Regions," by William Papier, director of Research and Statistics, Ohio Bureau of Unemployment Compensation, May 12, 1965.

successful implementation of this act would be of benefit to companies such as my own. I certainly cannot speak as to the needs of large corporations or those which are heavily engaged in Federal defense or space business. It may well be that they have close access to the most current research and development or else are able to support sufficiently larger R. & D. budgets for their own purposes.

The experience of my own company provides a "living" example that there can truly be a potential of economic benefits for military-initiated technologies. These technologies, properly planned and applied to existing industrial problems, can in turn provide a benefit for our entire economy. As illustration of these comments, I will mention a few facts about my organization.

My company, Industrial Nucleonics, was formed in 1950 to blend together two of the above technologies for useful industrial purposes. By blending the techniques of (1) nucleonics and (2) servomechanism practice, we were able to measure materials in America's industries and provide for the first time automatic control of the processes making these materials. The job of creating a new company and breaking into a new set of applications was not an easy one. Yet the ultimate success of the organization depended upon the soundness of and the need for the two technologies upon which we based our business.

Since their introduction, these nucleonic-control systems have come to be routinely used in the control of virtually all basic raw material processes. These measuring-control systems now find application in industries among which are rubber, steel, plastics, paper, food, chemicals, petroleum, mining, and tobacco. The benefit to the American economy of such systems was estimated by former AEC Commissioner Willard F. Libby as amounting to about \$0.5 billion in 1957.² Typical savings by industry are as shown in table I taken from the "Proceedings of the Second Geneva Conference."³

During the history of my company, over \$14 million has been spent out of operating income for further research and development of new measurement and control products. The magnifying effect of these privately supported research and development activities can be quickly seen from the following table.

PAYOFF OF NUCLEONICS SYSTEMS

R. & D. expenditures of \$11 million provided entirely new management and control systems for America's basic industries.

Industry has spent \$100 million on these nucleonics information sensing (measuring) applications.

The tangible annual return to the U.S. economy from industrial uses is \$500 million.

The key to obtaining such payoff is the proper planning and control of research and development activities.

There has even occurred what I have referred to as "inverse spinoff." By this, I mean that the techniques and products which have been invented and created for industrial processes in turn provide today very unique solutions to defense or space problems. Extension of this self-funded R. & D. has now been applied to (1) precision missile tracking, (2) measurement of space radiation, (3) measurement of cryogenic fuels in missiles, and (4) guiding aircraft and helicopters. Hence, a full circle has been made. A federally created technology was further developed and applied to peaceful purposes. The extension of these peaceful applications then provided new space uses which would not have been dreamed of by the practitioners of the original technology (nucleonics). It seems to me that the basic goal of our technology utilization programs is to repeat the above story and sequence of events many times over.

The State Technical Services Act could supply, in part, some of the ingredients necessary to the growth of new technologically based companies. Let me cite three of these ingredients which in my own experience are essential to the growth of new companies. These are:

1. One or more basic technologies developed to some point of perfection:
2. An interested center of technology or institute that can at least work with a new growing company in providing some of the initial technical and scientific backup. In my own case, Battelle Memorial Institute provided some of this

² "The Atomic Triad—Reactors, Radioisotopes, and Radiation," by Willard F. Libby, "Proceedings of the Second United Nations International Conference on the Peaceful Uses of Atomic Energy," vol. 19, United Nations publication, 1958.

³ "Recent Developments in Industrial Applications of Isotopes: Gaging and Nondestructive Testing," by Paul C. Aebersold and E. Eugene Fowler, "Proceedings of the Second United Nations International Conference on the Peaceful Uses of Atomic Energy," vol. 19, United Nations publication, 1958.

technological input and, most important of all, technical backup in the early days of my company; and

3. Entrepreneuring inventors who are first willing to take the risk of entering business and who are able to establish the economic need for a product or service and then manage the successful development, manufacture, and sale of the product.

A fourth ingredient that is important and might be listed is capital backing. However, it seems to be the experience of new companies that when they have a sufficiently reliable product to market for which there is a determined need and when they can demonstrate their ability to provide sound industrial management, the necessary financial backing can be found. In fact, according to a number of management personnel with background in both the technical and business aspects of new companies, it is often found that there is more capital available than there are good ideas with appropriate talent for their exploitation.⁴

Now let us look at some of the possible benefits the State Technical Services Act could provide:

1. It could provide the availability of new technologies based upon the vast Federal expenditures for defense and space activities. Knowledge of these technologies could be made available in all areas of the country and matched to the particular industrial needs of each area.

2. It could provide the new, growing, technologically based industries with an interested technical organization. This technical organization would be available as a "panel of experts" in diverse fields of science and technology.

3. It could serve as an incentive for the universities and local industries to work more closely together. Such cooperation would benefit both local industry and education.

The role of the State or regional institution is to provide an initial input of technical knowledge to local companies. The business decisions to invest money and carry forward the actual development of a technology into a useful and profitable product would have to be made by the individual entrepreneur-manager. These institutes in no way would compete with private enterprise. The Government should encourage but yet not control free enterprise. By so doing, the Government would provide a favorable environment for the growth and success of new industries without showing partiality to one region, industry, or company.

Summary

In summary, there is a need for applying our technical resources throughout the country. These resources can be utilized to translate technology into new products, processes, and services. Such translations provide the basis for new growth companies turning out products undreamed of several decades ago. Such products generate the employment needed to maintain a high standard of living.

The State Technical Services Act is in no way a substitute for inventive and entrepreneurial desire and abilities. Such must come from the intellectual curiosity and stimulation of risk-taking possible under our American free enterprise system. Nevertheless, the reasonable operation of the programs under this act could provide a strong initial input and stimulus for matching the needs of our commercial and industrial economy to the great progress being made today in the many areas of science.

TABLE I.—*Typical samples of savings using nuclear control systems classified according to industry and application*

Industry	Sample application	Savings per year
(a) Metals.....	Tandem cold-roll mill (5-stand).....	\$200,000 to \$600,000.
(b) Rubber.....	Tire fabric-calendar.....	\$65,000 to \$150,000.
(c) Paper.....	Papermaking Fourdrinier machine (160-inch sheet).	\$65,000 to \$200,000.
(d) Plastics.....	Calendered sheet and film.....	\$50,000 to \$150,000.
(e) Laminated plastics.....	Saturator dip coater.....	\$140,000.
(f) Coated abrasives.....	Abrasive line.....	\$96,500.

Source: "Recent Developments in Industrial Applications of Isotopes: Gaging and Nondestructive Testing," by Paul C. Aebersold and E. Eugene Fowler, Proceedings of the 2d United Nations International Conference on the Peaceful Uses of Atomic Energy, vol. 19, United Nations Publication, 1958.

⁴ "The Role and Effect of Technology in the Nation's Economy," hearings before a Subcommittee of the Select Committee on Small Business, pt. 2; statement of Dr. Richard S. Morse, chairman of the board, Cryonetics Corp., Burlington, Mass., pp. 193-204, June 5-6, 1963.

BIOGRAPHICAL SKETCH OF HENRY R. CHOPE, COLUMBUS, OHIO

Henry R. Chope was born in Louisville, Ky. He studied mathematics and science at the University of Louisville. He was graduated from the Ohio State University, Columbus, Ohio, in electrical engineering and holds advanced degrees in engineering sciences and applied physics from Harvard University in the California Institute of Technology.

During World War II, he applied electronics and radar for measuring upper air radiation and atmospheric phenomena and developed electronic systems for these measurements.

He was a founder and is presently executive vice president of Industrial Nucleonics Corp., Columbus, Ohio, which company was the first to specialize in the industrial applications of atomic energy for process control. He holds some 25 patents issued or pending in the fields of measurement, automatic control, computers, and data processing.

He participates as a member of the Labor-Management Committee of the Atomic Energy Commission, the Ohio Atomic Energy Advisory Board, and various U.S. Chamber of Commerce, and National Association of Manufacturers committees on science, technology, and patents.

Senator BREWSTER. Do we have Mr. Edwin Webber here?

STATEMENT OF EDWIN W. WEBBER, DIRECTOR OF INTERSTATE RELATIONS, NEW ENGLAND COUNCIL, BOSTON, MASS.

Mr. WEBBER. Mr. Chairman, I am appearing on behalf of the New England Council as secretary of its Committee on Science and Technology. By way of explanation, the council is a private, nonprofit organization, composed of 2,200 members drawn from business, education, labor, and government within New England. It is devoted to the development of a sound and dynamic region through utilization of all of the region's human, natural, and material resources. It seeks to identify the region's broad public interest and to promote appropriate programs of action to implement its findings. The council is, therefore, interested in S. 949, the proposed State Technical Services Act of 1965.

This proposed bill would authorize the Federal Government to make grants to States in support of programs to make better commercial use of the latest findings of science and technology. Such programs, planned and carried out locally, would put this important information in the hands of local industry and business. To qualify for Federal matching funds, a State would designate an institution or agency to prepare and administer the technical services programs within the States in which all qualified institutions in the State or region could participate.

The role of science and technology and its impact upon economic growth has long been recognized as an important factor in the New England area. The attendant expansion of new technical enterprises, much of which has been brought about as a result of Federal-sponsored activities, is an important influence on the New England economy.

In recognition of the significance of science and technology in regional economic development, the council has established a committee on science and technology, under the chairmanship of Richard S. Morse, and composed of representatives from the region's industrial-academic-financial community. This committee is currently studying ways to enhance the New England economy through the expended use of new technology and advanced management concepts. We believe that an important aspect of such activities involves the use of such

management methods underscored by a high order of technical planning on a regional basis.

The importance of Federal research and development activities is a generally recognized fact today. These activities have resulted in impressive technological advances. Of equal significance is the fact that such activities, regardless of their scientific significance, are useful to the community only to the extent that new products and processes can be introduced into the civilian sector.

The proposed State Technical Services Act would accelerate this process of introduction with at least the following advantages to the New England region:

1. A broadening and strengthening of the region's economic and industrial base, and a further upgrading of our industries, by making more readily available information about recent technological developments.

2. An increase in employment within the region through facilitating the industrial use of new technology and the manufacture of new products.

3. An improvement of the competitive position of New England products in the world market.

Commercially significant products will not evolve from research programs without a strong cooperative effort involving universities, communities, industries, and the Federal and State Governments. A most important feature of this bill is the provision that if two or more States join in a cooperative program and designate a regional institution, that institution would qualify for 10 percent more assistance through non-matching-Federal grants.

The council believes that if the technical services program takes on a regional form, it can be more effective in achieving the objectives of the legislation. The creation of regional and interstate cooperative efforts in New England has become an increasingly important means for seeking adequate solutions for such complex and diverse problems as ground and air transportation, stream and air pollution, recreation and power development, and the development of marine resources. New England, with its wide experience in successful interstate achievement, can be expected to implement the technical services proposal in a manner designed to make maximum use of interstate cooperation.

It is a fact that New England has unique educational facilities and technical competence. It is vitally important to see that these resources are made available to the region as a whole, and particularly to areas and industries more remote from and less familiar with advances in science and technology which may have special relevance for them.

The problems of technology transfer become even more urgent in view of changes in the character of our defense effort and perhaps its dollar value. New England has many examples of large defense facilities or industries dominating a local area's economy. A better diffusion of new techniques and knowledge can assist in the diversification and strengthening of local industry and help prevent economic disaster from occurring should a defense cutback or closedown occur.

Beyond this, there is the important opportunity for all to share in the national goals of economic growth, and in so doing help reduce the prospects of long-term unemployment, poverty pockets, and economic

decline. We believe that the Technical Services Act will accelerate that growth process by permitting us to extract further advantages from the results of modern science and technology.

Thank you.

Senator BREWSTER. Thank you very much, Mr. Webber.

With Mr. Webber's testimony, we conclude 3 days of hearings on S. 949. I think it is interesting to note that not a single witness appeared in opposition to this measure, and a great many supported it, including one of the members of Maryland's Economic Development Commission. I am happy to see that Maryland and New England, as well as many other States, concur in their support for this bill.

The record will remain open for a full week and we will receive any additional statements that anybody wishes to submit. This concludes the hearings on S. 949. The committee stands adjourned.

(Whereupon, at 2:14 p.m., the committee was adjourned.)

(The following statements, letters, etc., were received for the record:)

THE UNIVERSITY OF GEORGIA,
COLLEGE OF BUSINESS ADMINISTRATION,
Athens, Ga., June 8, 1965.

HON. WARREN G. MAGNUSON,
*U.S. Senate,
Senate Office Building,
Washington, D.C.*

MY DEAR SENATOR MAGNUSON: I had hoped to be present at your committee hearings on June 10 relative to Senate bill 949 entitled "State Technical Services Act of 1965" to offer testimony relative to the interests of the business schools in this area. It appears now that I may not be able to join my colleagues from the National Association of State Universities and Land-Grant Colleges but I do wish to offer a statement.

Enclosed are copies of my projected testimony which I hope may be placed on the record indicating our support of the bill.

Cordially,

J. WHITNEY BUNTING, *Dean.*

TESTIMONY ON S. 949, FOR STATE TECHNICAL SERVICES ACT OF 1965, BY J. WHITNEY BUNTING, DEAN, COLLEGE OF BUSINESS ADMINISTRATION AND GRADUATE SCHOOL OF BUSINESS ADMINISTRATION, UNIVERSITY OF GEORGIA, ATHENS, GA., ON BEHALF OF THE AMERICAN ASSOCIATION OF COLLEGIATE SCHOOLS OF BUSINESS AND THE DIVISION OF BUSINESS ADMINISTRATION OF THE NATIONAL ASSOCIATION OF STATE UNIVERSITIES AND LAND-GRANT COLLEGES

Mr. Chairman and members of the committee, by name is J. Whitney Bunting and I am dean of both the College of Business Administration and the Graduate School of Business Administration of the University of Georgia. I am appearing before you in the capacity of chairman, committee on Federal legislation, American Association of Collegiate Schools of Business; vice chairman, division of business administration, National Association of State Universities and Land-Grant Colleges; and as a member of the subcommittee on legislation of the latter body. These two groups include in their membership the leading schools of business administration at the college and university level, both public and private. The membership of the American Association of Collegiate Schools of Business is currently 117 institutions fully accredited and performing quality education for business. The National Association of State Universities and Land-Grant Colleges includes 97 publicly supported institutions with either colleges of business administration (or departments or divisions) included in its division of business administration. Statistics indicate that approximately 20 percent of all students pursuing higher education in the United States are enrolled in the field of business administration. Moreover, the facilities of business administration in these colleges and universities comprise the largest source of talent to carry out the goals and objectives of the State Technical Services Act. Through teaching, research, and consultation these faculty mem-

bers provide a tremendous resource for economic and business development in the areas of service which each purports to cover.

Although I should like to suggest, on behalf of my colleagues, one very important modification of proposed S. 949, I wish to emphasize quite vigorously our support of the passage of this bill. We believe that the future economic and business development of the Nation, its States, regions, and communities is dependent in large part upon our ability to place in the hands of businessmen the great body of knowledge that is constantly being developed through research into economic and business operations. Moreover, much of this new knowledge must be analyzed and adapted for the use of the many diversified types of business institutions. This requires interpretation and application that can best be provided by the personnel in our collegiate schools of business in this country.

American business and industry is today a complex and dynamic process. Moreover, other nations of the world are also making great strides in business "know-how" and techniques, thus creating a degree of competition in world markets that will become increasingly heavy as the years go by. Many of our business firms must have first-hand knowledge of this new methodology if they are to succeed and prosper. Yet much of this new knowledge is locked away where it can provide little or no economic value.

Millions of dollars of research money has been and is being provided by the Federal Government to support space era growth and development. Business and industry itself is contributing heavily as well. Often the results of such research projects provides knowledge and information that could be tremendously useful to our business society when it can be placed in the proper hands with proper advice and assistance. The State Technical Service Act does provide a mechanism through which this knowledge can flow into the national business economy, thus serving as a strong force for rapid economic advancement and development. Our Nation cannot afford to place roadblocks in the pathway of new knowledge flowing into the business enterprise.

The schools and colleges of business administration which I represent would respectfully suggest a broadening of the wording of S. 949 so that it will more nearly represent a solution to national economic needs. It is true that the act does specify that a qualified institution in the terms of the act should have an accredited college of business administration. However, much of the remainder of the act is directed to the schools of engineering and, perhaps, engineering extension. We feel this to be a serious error.

Perhaps a major difficulty is the titling of the measure, "State Technical Services Act." Public connotation of the term "technical" immediately restricts activity to the area of science and engineering. It is true that such information is a vital part of any program of informational aid to business. Yet this is not the only area of potential informational support needed, nor is it even the major area. Practically every business process today is technical in nature, whether it be accounting, finance, management, marketing, or even labor relations. The application of scientific methods, procedures, and equipment to the solution of business problems and to aid in the development of the economic process is a matter of practice. Collegiate schools of business have aided in this process as a normal function and duty. It seems to the colleges of business that this has not been properly recognized in the bill currently before this committee, S. 949. For example, a new mechanized technique in accounting provided to an industry or business is truly a "technical service." The application of computers to management decisionmaking is a "technical service." The application of new knowledge reached through research in the behavioral sciences is a "technical service." Even the development of ethical conduct in business situations might be a "technical service." Yet the wording of the proposed act before you does not offer strong evidence that these areas should be included as technical services. We respectfully suggest that the Senate Committee on Interstate and Foreign Commerce give additional consideration to this matter.

We further suggest added recognition to the role of the colleges of business administration in the implementation and administration of the program. As indicated earlier in this testimony, the faculties of the colleges and universities engaged in higher education for business provide the greatest reservoirs of talent to apply technical services in the broadest possible sense to the solution of business problems. They have a history of strong interest in economic development in all areas of this Nation and it is their wish to continue this tradition. If S. 949 is passed and becomes the law of the land, we foresee no other success-

ful possibility for the objectives of the act than by the full and complete utilization of the colleges of business administration along with other academic areas of our universities such as engineering, extension, agriculture, and arts and sciences.

May I reemphasize, on behalf of the associations that I represent, that we are strongly in accord with the goals and objectives of S. 949. We believe it can have meaningful implication for the future development of our economy. We feel that the plan to make available "technical services" to business and industry is long overdue. But we respectfully ask that the committee consider most seriously:

1. A more detailed statement or definition of technical services to include all advances of knowledge related to business practice; and
2. A more specific inclusion of the role that colleges of business administration must play in the proper implementation of the act.

BOSTON, MASS., June 7, 1965.

HON. WARREN G. MAGNUSON,
Chairman, Senate Committee on Commerce,
Senate Office Building, Washington, D.C.:

I am pleased to reaffirm my support of the State Technical Services Act in connection with your committee hearings on S. 949. Massachusetts, as a leader in research and development, recognizes the importance of science and technology to industrial development. The cooperative programs authorized by this legislation will enable the Commonwealth and its localities, together with our universities and private industry, to reinforce our continuing efforts to promote economic growth.

Sincerely,

Gov. JOHN A. VOLPE.

THE UNIVERSITY OF CALIFORNIA,
Berkeley, Calif., May 27, 1965.

Senator WARREN G. MAGNUSON,
Old Senate Office Building,
Washington, D.C.

DEAR SENATOR MAGNUSON: The University of California enthusiastically supports S. 949, the State Technical Services Act of 1965, designed "to permit the Federal Government to join with State governments, universities, and local communities in putting scientific and technical information, in a useful form, into the hands of private industry in all of the States."

The Nation's universities and their faculties have been particularly cognizant and concerned about the fact that we do not now have programs or the resources needed to place the vast amount of new knowledge developed through research into the hands of those who can translate it into applied technology for the benefit of all of our communities and their citizens.

We believe, as the authors of this legislation point out, that this kind of proposal, if successful in achieving its expected results, would not only lead to improved processes and products but also to increased employment through development of the new businesses and services that flow from the exploitation of technology.

We hope that you will support this important legislation which offers so much in the way of new opportunities for the citizens and communities in all of the 50 States.

Sincerely yours,

CLARK KERR.

NORTH DAKOTA STATE UNIVERSITY,
Fargo, N. Dak., February 9, 1965.

HON. WARREN G. MAGNUSON,
U.S. Senate,
Washington, D.C.

DEAR MR. MAGNUSON: We recently read an analysis of your bill, S. 949, just introduced and referred to the Senate Commerce Committee of which you are chairman.

We here in the engineering experiment station at North Dakota State University, have been interested in the dissemination of engineering information for the benefit of the small businessman in the State for some time. A copy of one of our efforts in this direction is enclosed.

Such a program as you advocate in this bill would be of great benefit to those States which are least industrially oriented, and of considerable help to the small industries in every State. We will watch the progress of your bill with interest and would appreciate detailed information on it, as well as on its status, if you can supply it for us.

Very sincerely,

FRANK A. RALEY,
Professor and Chairman.

U.S. SENATE,
COMMITTEE ON FOREIGN RELATIONS,
February 18, 1965.

Hon. WARREN G. MAGNUSON,
Chairman, Commerce Committee,
Senate Office Building,
Washington, D.C.

DEAR MR. CHAIRMAN: I am enclosing a letter received from Dr. George R. Town, dean of the College of Engineering, Iowa State University, Ames, Iowa. Dr. Town is in support of the State Technical Services Act of 1965, S. 949.

He points out that at Iowa State University firsthand experience has been had in this type of work through the engineering experiment station, their engineering extension service, and their center for industrial research and service, all functioning at the university.

In view of Dr. Town's experience in this field, it occurred to me that the committee might wish to bring him before the hearings on S. 949. I am glad to furnish this letter to you indicating Dr. Town's interest in this legislation.

Yours sincerely,

B. B. HICKENLOOPER.

IOWA STATE UNIVERSITY OF SCIENCE AND TECHNOLOGY,
COLLEGE OF ENGINEERING,
Ames, Iowa, February 15, 1965.

Hon. BOURKE B. HICKENLOOPER,
U.S. Senate,
Senate Office Building,
Washington, D.C.

DEAR SENATOR HICKENLOOPER: I am writing to urge your support of the State Technical Services Act of 1965, S. 949.

The purpose of this act is to encourage the diffusion and application of science and technology in industry through cooperation between industry and educational institutions. Here at Iowa State University we have had firsthand experience in this type of work through our engineering experiment station, established in 1904; through our engineering extension service, established in 1913; and through our center for industrial research and service, founded in 1963. The function of this last organization is to carry on exactly the type of work described in the act; namely, to utilize the resources of the university in direct service to Iowa industry.

Based on our experience, we feel strongly that the work proposed in the State Technical Services Act of 1965 can and will be effective in promoting the economic growth of the States. Here in Iowa, the additional financial support provided by the act can be used effectively in expanding activities already underway here at Iowa State University and elsewhere. Iowa industry, and the entire economy of the State, will profit.

I hope that you will see fit to support this act.

Very truly yours,

GEORGE R. TOWN, *Dean.*

UNIVERSITY OF NOTRE DAME,
CENTER FOR CONTINUING EDUCATION,
Notre Dame, Ind., April 7, 1965.

HON. WARREN G. MAGNUSON,
*Senate Office Building,
Washington, D.C.*

DEAR SENATOR MAGNUSON: I believe the proposed State Technical Services Act of 1965, which you introduced in the Senate, would represent a real vehicle through which both public and private educational institutions, in cooperation with the Federal Government, could support local community programs designed to effectively use the latest findings of science and technology in industry. Such programs are badly needed in many areas as we have not yet begun to find ways of applying the emerging technological innovations in commerce and industry.

State universities and land-grant colleges have traditionally been able to contribute in a very special way toward solving the educational needs and problems of their areas. This is a meaningful and appropriate use of State funds—solving some of the problems of the State. As the cost of such services increased, they were able to go back to the State legislatures and secure the additional funds necessary to sustain and extend this service.

To date, the private educational institutions, particularly the national ones, have not been able to contribute and participate to the same degree in the many pressing educational needs of their communities because of the lack of resources.

Those communities, particularly in the Midwest and Far West, that happen to have a State school located within a reasonable distance from them have enjoyed great educational opportunities at all levels—extension work and continuing education programs in business, agriculture, mining, and the professions. There are many, many communities, however, that have not had this advantage—even though located reasonably close to reputable private institutions. The private institutions could not justifiably expend their limited resources in solving particular problems in local communities.

The proposed State Technical Services Act of 1965, as I see it, would permit the private institutions to present imaginative and responsible programs to assist local communities in solving some of their social, cultural, and economic problems. Because of their proximity and knowledge of the area, this service could be provided at a price considerably less than the cost to a public institution for a similar service.

As one who is responsible for the work of continuing education at all educational levels and in a variety of disciplines, I urge your support of this new program.

Sincerely,

THOMAS P. BERGIN, *Dean.*

THE CHAIRMAN OF THE COUNCIL OF ECONOMIC ADVISERS.

Washington, June 7, 1965.

Senator WARREN MAGNUSON,
*Commerce Committee,
U.S. Senate, Washington, D.C.*

DEAR SENATOR MAGNUSON: I wish to offer this letter in support of S. 949, the proposed State Technical Services Act, and to have this letter placed in testimony.

Technical change has contributed more than any other factor to our longrun economic growth. In its 1964 annual report, the Council of Economic Advisers stated, "The crucial element in the rise of our material well-being has been the progressive utilization of our ever-growing store of knowledge of the world in which we live." Since the turn of the century, the Nation's real gross national product has grown at an average rate of 3½ percent a year—an eightfold increase within a single lifetime. It is difficult to estimate precisely how much of this growth has resulted from the technical improvements and how much has resulted from increases in the available inputs of capital and labor. However, private estimates have attributed to technical progress as much as one-half of the growth of real gross national product or seven-eighths of the growth in real output per man-hour.

Although it is by far the best single measure of longrun growth, real gross national product understates true longrun growth in two important respects. First, it takes incomplete account of the value of the many new and improved products that have become available over the years. Second, it does not value

the increased leisure which technology has made possible at the same time we have been increasing our production of goods and services. Analysis of real gross national product therefore understates somewhat the true longrun importance of technical change.

In the coming years, the Nation will be increasingly dependent on the rapid growth and spread of new technology to maintain a high and sustained rate of economic growth. Since 1957, the economy has operated with substantial slack. Since 1961, primary attention has rightly been directed to fiscal and monetary measures that help to create employment opportunities for idle workers and productive facilities. We have still not achieved our full employment goals and we must not relax our efforts to do so. However, as the gap between potential and actual output is gradually narrowed, greater attention must be paid to measures that will increase productivity, and raise the growth of the potential. Such measures can permit us to extend our 4-year record of rapid and sustained expansion. At the same time, they will help to prevent the buildup of inflationary pressures and they will gradually improve our balance of payments. By speeding the application of new technology throughout the country, the State Technical Services Act should be a major step in this direction.

It is now fully recognized that governments have major responsibilities in promoting the growth and spread of new technology. The Federal Government finances two-thirds of the Nation's vast research and development effort. Governments at all levels make substantial contributions to the financing of our educational system. The State Technical Services Act will provide a unique cooperative State-Federal program, designed to make modern technology available wherever it can be profitably employed. Studies have shown that innovations frequently take years or decades to spread throughout industry. As modern technology becomes more complex and specialized, it becomes more important to have improved channels for its dissemination to all potential users. The State Technical Services Act should provide an important new channel for the rapid spread of modern technology.

The Federal Government has major programs to help speed the development of depressed regions of the country. The availability of technical manpower and specialized technical services is an important factor in developing the potential of low-income areas. By increasing the availability of know-how in all regions of the country, the State Technical Services Act will be an important factor in spreading prosperity to all parts of the Nation. It is important that the act will provide programs that are tailored to local needs and opportunities. This will permit the programs to serve the goal of regional development much more effectively than would be possible by artificially spreading Government research and development contracts around the country. Most Government research and development contracts are intended to further specific national defense and other needs. They should therefore be placed where these national needs will be best served. Regional needs can be best met through the State Technical Services Act.

The State Technical Services Act clearly cannot solve all our problems of economic growth. But it can be an important instrument in furthering national and regional growth, price stability, and an improved balance of payments. I hope that your committee can report favorably on the bill, and that Congress will speedily enact it into law.

Sincerely,

GARDNER ACKLEY.

(The following statements and letter were submitted for the record:)

U.S. SENATE,
COMMITTEE ON ARMED SERVICES,
June 10, 1965.

Mr. MICHAEL PERTSCHUK,
Staff Counsel, Senate Commerce Committee,
New Senate Office Building,
Washington, D.C.

DEAR Mr. PERTSCHUK: Mr. Fielding H. Lewis, director, Industrial Development Division, West Virginia Department of Commerce, was scheduled to appear before the Senate Commerce Committee at 10 a.m., June 9, 1965, to testify in behalf of the State Technical Services Act of 1965. Regrettably, unforeseen circumstances prevented Mr. Lewis from making the trip to Washington. He

has sent to me the enclosed brief of testimony which he would have given, had he been able to do so, and I would like to have it included in the committee hearings.

Thank you for your kind attention.

Sincerely yours,

ROBERT C. BYRD, *U.S. Senator.*

STATEMENT OF FIELDING H. LEWIS, DIRECTOR, INDUSTRIAL DEVELOPMENT DIVISION,
WEST VIRGINIA DEPARTMENT OF COMMERCE

The State Technical Services Act is of great importance to the State of West Virginia.

There is a great wealth of new science and technology emanating from research and development work of a number of Federal agencies. There is a real opportunity to transfer this technology and science to our existing industries. A great many of these developments could not have been brought about by private industry because of the cost involved.

Industries in the State of West Virginia have, on a number of occasions, expressed interest in the possibility of taking advantage of new technology and new scientific developments.

Since matching funds, from the State of West Virginia, would be required as set forth in the State Technical Services Act, it would seem logical to request that State government should have a measure of control over administering and coordinating programs within the State.

This is a constructive act and has great potentials in transferring new technologies and sciences to industries and the State of West Virginia is very much interested in passage of the act.

STATEMENT OF LEONARD K. CRAWFORD, PRESIDENT, THE CONSULTING ENGINEERS
COUNCIL, WASHINGTON, D.C.

Consulting Engineers Council of the United States represents 1,700 independent firms of consulting engineers in private practice throughout the country. As the national organization representing the private engineering practitioner, CEC supports efforts to speed the economic growth of the country through effective use of our technical and scientific knowledge. Initiative in encouraging and directing a greater distribution of technical knowledge to business and industry will contribute to the expansion of the economy and the growth of our private enterprise system.

This will enhance economic growth and private enterprise only to the extent that it does not at the same time compete with the private business community which it is trying to help. To this extent Consulting Engineers Council cautions against any provisions in this legislation which would result in the providing of technical services by public bodies or agencies or tax-exempt foundations when the same services are provided by taxpaying, private consulting engineering firms and research laboratories.

The providing of technical services to business, industry, and Government is an area in which the private engineering community has long been preeminent. The wide range of highly diversified and specialized professional engineering talent available in private engineering firms and laboratories has in large measure contributed to the Nation's technical achievements and fund of knowledge. Faced with the constant need of maintaining the utmost in efficiency, economy, and expertise, the engineer in private practice has taken an active lead in providing a wide range of specialized engineering services in industrial plant modernization design of buildings, and the planning and design of public works projects and military installations.

No engineering problem—whether it is the design of a small piece of specialized equipment for automation or the economic feasibility study and planning of a multimillion dollar hydroelectric powerplant—is outside the expertise of the modern engineer.

To assure that proper safeguards are present in this legislation to preclude Government-financed competition by public bodies with private engineering firms and individuals, CEC suggests the following amendments:

SECTION 5(e)

Change the present wording, "Determined that such technical services program does not provide a service performed as practicably by private technical services, professional consultants, or private institutions;" to read: "Determined that such technical services program does not provide a service that is now available or could be made available as practicably by private technical services, professional consultants, or private institutions;".

SECTION 5(f)

Add the italicized words to the present wording:

"Planned no services specially related to a particular firm or company public work, *or other capital project* except insofar as the services are of general concern to the *industry and commerce of the* community, State, or region;".

The amendment to section 5(e) is suggested to provide for the occasion when a technical engineering service which is not now available is perfected to the point that it is offered as a service to the public. The present wording, it is felt, does not take into account the offering of future technical services.

The amendment to section 5(f) regarding "public work or other capital project" is offered so that the section will conform to other provisions in the bill limiting services to business and industries. The amendment suggesting the addition of the words "industry and commerce" is offered to remove any implication that specific technical services under this act would be provided directly to a community, municipality, State agency, or other public body. Such an interpretation would lead to a direct competition with private engineering firms which perform on a contract basis much of the engineering services for all branches of government at the Federal, State, county, and municipal levels.

In summary, Consulting Engineers Council and the American Council for Independent Laboratories, which represents private laboratories, respectfully recommend adoption of the clarifying amendments to help assure that the legislation achieves its intended purpose. CEC and ACIL believe that this bill, if enacted, will provide encouragement to a broader dissemination of technical knowledge now available in engineering and science.

STATEMENT OF SENATOR EDWARD V. LONG IN SUPPORT OF S. 949

Mr. Chairman, I am pleased to support the proposed State Technical Services Act for it is a concept which will increase the opportunities to share in the benefits of modern science and technology for all regions of the United States. Before suggesting to the committee what this act might mean to Missouri, I would like to review three aspects of technology which I think are most important to the present discussion.

We are all well aware of the importance, and magnitude of science in our national economy. In the past 10 years, the Government has supported almost \$100 billion in research and development programs. In addition, the private sector has invested many billions of dollars of its own in exploring and applying the technical arts. Much of this effort has been directed at solving specific problems or evolving well defined items of hardware. However, the underlying principles, and, indeed in some cases, the same devices and processes can find usage in other areas of industry and commerce. When this additional "bonus" application occurs, the return on the original expenditure is multiplied many times. It is just plain good business sense to seek additional usage for this bought-and-paid-for resource of technical knowledge, especially when the cost of placing these ideas and data in the hands of industry is only a fraction of the acquisition expense.

Conversely, American industry is hard put to maintain economic expansion and full employment. We must keep pace internationally with the modern, highly productive machinery and low labor rates in foreign factories. The skills of competitive innovators overseas often are not distracted by the responsibilities of worldwide peace keeping and the international power struggle in space. Our industry must make full and efficient usage of our technology. Both large and small business must recognize their own needs for updating their methods and processes. They must pursue novel solutions with complete access to the reservoir of information and experience filled by our postwar years of scientific support.

A third facet of the usage of technical data is the rising recognition of new problems for society which challenge the management skills of our institutions. Pollution, urban transportation, automation, and resource allocation are some of the problems which are products of modern technology and will require similar great scientific ingenuity for their solution.

I believe the concept of accelerated technology transfer is the answer to all three of the aspects discussed above. The improved utilization of scientific information can very well increase the return on our R. & D. investment, accelerate economic growth, and provide the basis for overcoming the undesirable consequences of our highly developed urban civilization.

There are numerous examples to encourage us toward a more methodical approach to technology utilization as envisaged in the State Technical Services Act. All of the instances are not those of private industry putting to use Government-developed information. Historically, many new industries have been founded by imaginative men who took bits of information and combined them in applications never dreamed of by the original investigator. Technology transfer in the past has occurred through diverse mechanisms such as scientific and industrial literature, professional society meetings, employee mobility, corporate mergers and acquisitions, and, of course, through the higher education process. But these natural means of transfer have been slow and erratic. We are now committed to a more rapid pace and a greater scientific content in our economic growth. The portion of all research and development supported by Federal funds is now 75 percent. This makes the transfer of Government-held technology of primary importance.

More recently, we have seen the positive results of pilot programs of the National Aeronautics and Space Administration and the Atomic Energy Commission. Missouri's own Midwest Research Institute in Kansas City participated in one of the first regional experiments to point out the possibilities of industrial utilization of space technology, beginning in the fall of 1961. This program was termed ASTRA (applied science and technology—regional advance). MRI was chosen for its proven effectiveness in transferring the results of its own contract research for the past 20 years to corporate clients large and small. The NASA technology utilization program begun at MRI has overcome initial barriers of skepticism from potential users and the need to extract and identify useful concepts and devices from the originators. One lesson learned is that close personal contact is necessary for the actual application of existing knowledge to new uses. The amazing success of the Agricultural Extension Service is testimony to this point. Local effort, personalized and selective, is the key to technology transfer. The proposed act has this idea as a basic ingredient.

Another fact apparent from ongoing efforts is that States such as Missouri can benefit from R. & D. done anywhere, if local initiative is taken to describe technical needs and problems and if access is available to a highly developed, flexible, information dissemination system. The computer-based, information-retrieval project developed by NASA at Indiana University and the "microfiche" storage of documents now standard with the Department of Defense, Atomic Energy Commission, and National Aeronautics and Space Administration are valuable starting points for the Department of Commerce program.

Experience to date has shown that there is a critical minimum size which must be exceeded by industrial firms before they can or should do their own R. & D. Small business is particularly at a disadvantage in fields where technological change is rapid. And yet, America and its local regions are dependent on small business prospering and growing to provide increased employment and economic vitality. Thus, the availability of technical extension services from nearby universities can bring small business into contact with the scientific knowledge developed under U.S. tax-dollar funding which is public property, and can be thus turned to the public good.

Technology utilization can be a great aid to the conversion problem which besets industry when defense needs change. Those companies heavily involved in our military technology are in an excellent position to obtain advanced information, but are often not acquainted with the nondefense possibilities for their own inventions or those sophisticated devices and techniques which they are ideally suited to exploit. Diversification and matching of capabilities with civilian needs can create new economic strength for defense contractors.

I see another asset in technology transfer via our institutions of higher learning. Some time ago, we often thought of the universities as ivory towers, disinterested in the mundane, workaday world. Recently, we have come to recog-

nize that education is a lifelong process, that the school is an integral, participating part of the business and cultural life of its region. The State Technical Services Act will even more expose the science and engineering faculty to the environment of commerce and industry for which they are training students. This will result in a better appreciation of the university by business and a more competent group of graduates, attuned to the stringent requirements of today's competitive life.

Finally, I would point out that the traditional type of Government-sponsored science has changed drastically in the past 2 years. Before, much of the Federal R. & D. was related to security classified military programs. Much of the information which could be released was fed into the civilian economy through patent procedures which were slow at best. Now, we are embarked on major technology programs such as space exploration, oceanography, desalting, and the supersonic transport, where national defense is not a restriction on dissemination and where patentability is not a factor in many of the useful devices and procedures. This technology is properly in the public domain, whether developed in Federal intramural laboratories or by contractors. But it has little value until reported, published, and made available to users.

In evaluating the results of technology utilization efforts, we must fully recognize that the dollar expenditure and the entrepreneurial skill needed to successfully apply available scientific knowledge will often equal or exceed the original effort of invention. The creativity in matching existing data to an unrelated industrial need is equally important to the originating thought. Technology utilization will not come automatically with the passage of this act. It will come only with the interest of industry management and the hard work of transfer specialists in the Government and State institutions. It will require a new awareness on the part of companies unaccustomed to looking beyond their suppliers, customers, or competitors for sources of information.

I believe the State Technical Services Act is but one of many tools to be placed in the hands of our free enterprise economy. It is important and broadly conceived. But we should be careful lest our approval of this legislation discourage or dismay many other valuable ongoing programs in economic development. I support the university-extension concept and am proud of the start which has already been made at the University of Missouri by its extension division. But success in technology transfer will require full utilization of all our institutional resources.

I would emphasize the continuing importance of regional ventures such as the St. Louis Research Council. Missouri has two clear examples of the fact that economic problems are no respecters of political boundaries such as State lines. St. Louis shares its technical development with Illinois on the east, and Kansas City has much to gain in joint participation with Kansas on the west. I am pleased to note the incentive in the act of a 10 percent additional Federal contribution to enter into regional projects. We should not let arbitrary geographical demarcations interfere with the most efficient use of available organizations.

Existing economic development groups such as the Missouri Division of Commerce and Industrial Development will continue to be a major factor in economic activity and should also have a role in technology utilization. Of particular value would be the door opening for technology transfer established by the relationship of trust and respect which these agencies have earned from local industry.

The State Technical Services Act will be administered by the Department of Commerce, but this should only complement and not replace the current efforts in information dissemination by the National Aeronautics and Space Administration, the Atomic Energy Commission, the Department of Agriculture, the Department of Defense, the Federal Aviation Agency, and the Department of Interior. The valuable contributions of many Federal agencies can augment the accomplishments of the future Department of Commerce activity as well as its own present Institute for Applied Technology, Clearinghouse for Federal Scientific and Technical Information, and the Business and Defense Services Administration. Some degree of care will be required to coordinate these successful ongoing programs.

In conclusion, I would sound a cautionary note that none of us expect too much too soon from this act. Creativity and innovation have been subjected to much analysis, but are yet not well understood. Even the purposeful creation of scientific knowledge to meet a specific goal is only partially successful. The

evidence that additional second and third usages of that knowledge can be made for economic gain is persuasive and justifies the modest investment in the act under discussion. The results and the timing of their materialization are not predictable. I am told that the first 5 years of the State Technical Services Act will cost the Federal Government, in matching funds, \$140 million. By the end of this period, the postwar U.S. investment in R. & D. will be well over \$140 billion. Thus, if the proposed joint State-Federal approach can extract an additional bonus benefit of \$1 from every \$1,000 invested in science and engineering, it will have paid for itself. I am certain the value will be many times that amount and, in fact, will lead to a new surge in the American economy and our national well-being.

THE UPPER GREAT PLAINS—AN AREA OF NEED FOR TECHNICAL ASSISTANCE

STATEMENT OF SENATOR GEORGE MCGOVERN ON THE PROPOSED STATE TECHNICAL SERVICES ACT OF 1965

I am very pleased to testify on behalf of the proposed State Technical Services Act of 1965, which I have the honor of cosponsoring with Senators Magnuson, Byrd of West Virginia, and Ribicoff.

The great prosperity and vigorous rate of economic growth which the United States is now experiencing are not shared equally by all of the regions of the country. The impoverishment and economic stagnation of Appalachia has been extensively discussed and dramatized. Federal programs which bear hope for the economic restoration of the area are now underway. The farming States of the northern Great Plains are also suffering a lag in growth. South Dakota's total personal income gained only 4 percent in the 1960-63 period, while the national growth rate was 22 percent. This is indicative of our need for new enterprises and opportunities.

The strong dependence of the economies of the upper Great Plains States on agriculture at a time when agricultural employment accounts for a steadily decreasing fraction of the labor force is one aspect of the problem. Other factors are the lack of emergence of new industries and the lack of expansion of existing businesses and industry to provide new employment opportunities which would replace those eliminated by our ever more efficient farming operations.

At a time when massive Federal expenditures in the military and space fields have propelled some areas of the country to new heights of business and industrial activity, industrial development in South Dakota is at a standstill. At a time when the continued growth of the State of South Dakota depends on the stimulation of its industrial potential, the State loses, each year, a significant fraction of the scientists and engineers educated within its boundaries. I speak of South Dakota, but the situation is the same in a number of States.

Technological innovation is an essential ingredient of industrial development. It is the mechanism by which the results of scientific research are translated into practical use. The histories of science and technology show that there is a very complex relationship between them. The massive national research and development effort since World War II, now at the \$20 billion-per-year level, is a vast source of new technology, yet experts agree that there has been only limited success in its transfer to industry generally. So-called spin off is not a very efficient or dependable process if left to occur by itself. It takes specific mechanisms and highly trained people to put new scientific information to practical use.

New technology and transfer techniques which are appropriate for one of our States are not necessarily appropriate for others. The problem of converting an active space/military complex to civilian oriented markets differs, for instance, from that of revitalizing a once-thriving industrial region that has lain fallow for 10 or more years. And the problem of introducing industrial activity into predominantly farming regions differs from both of these.

I believe that the proposed State Technical Services Act of 1965 provides an effective mechanism for stimulating local business and industries in all of the States to update their technology. Addressing myself to its application in the farming States, there are a number of features of the bill which would be particularly helpful.

The provision that the designated institution in each State would receive an annual grant of \$25,000 for each of the first 3 years of participation in the

program would enable each State to undertake a survey of its technical resources and give careful consideration to the best opportunities to introduce new technology into a rural, agricultural environment. The stress on the use of local experts would help assure that people who were knowledgeable about, and sensitive to, the needs of the region become involved in the program.

It is appropriate that our State universities and land-grant colleges which have so advantageously disseminated and encouraged the use of new technology in agriculture should now be called upon to apply their expertise in extension activities to the problem of industrial development. Our universities and colleges are eager to get to the task. The funds provided in the bill are both the means and an incentive for them to begin.

Finally, the special encouragement provided to regional planning and programs may be particularly appropriate to the agricultural States since they are geographically contiguous and their problems are similar. A single integrated program for the area might also be most efficient because of the relatively few industrial activities in each State.

The State Technical Services Act of 1965 presents an imaginative program, yet one whose basic features have been tried and found successful in the past. I believe that it merits the support of the Congress, and I urge its speedy enactment.

STATEMENT OF SANTIAGO POLANCO-ABREU, RESIDENT COMMISSIONER OF PUERTO RICO, WITH REFERENCE TO S. 949

Mr. Chairman, I appreciate and thank you for the opportunity to express my views before the committee with reference to S. 949, the Federal Technical Service Act of 1965. My study of the bill concerning its probable effect in the interest of disseminating scientific knowledge leads me to lend my most positive support.

Approval of the State Technical Services Act of 1965 would tend to promote the national economic growth by supporting State and regional centers devoted to placing the findings of science usefully in the hands of American enterprise. It would make available Federal funds for this purpose up to a maximum of one-half the cost of the approved annual technical services programs of the States and of the Commonwealth of Puerto Rico.

American enterprise has not made full use of the rapid progress in science and technology. Only large industries with highly developed research organizations and communication systems can convey the results of their own and other investigations to manufacturing enterprises. If the benefits of Government or privately financed research, whether of the United States or foreign, are made available to business and industry, it is my belief that this would give a substantial growth stimulus to the economy. It would help promote higher levels of employment, increase the efficiency of production, and help to raise the quality, and consequently, enhance the world competitive position of the United States.

The volume of technical literature reporting advances in science and engineering, and the possibility of applying these advances, have been growing at an accelerated rate. But the task of conveying information to the appropriate industrial levels is becoming increasingly expensive.

The contemplated programs involve sponsoring training programs, extension courses, industrial workshops, seminars, demonstrations, field visits, and preparation and dissemination of technical reports, abstracts, computer tapes, microfilms, and reviews, as well as other forms of scientific and engineering communication.

Much wider dissemination than is now practiced through available media is required in order to reach the potential users of new scientific and engineering information. It has been found that this is a very expensive proposition. Scientists and engineers trained to communicate effectively are very scarce. Skilled and high-salaried personnel are required for the tremendous task of abstracting scientific papers and engineering information, as well as for translating from languages in which original research papers are published. Similarly the cost of books and scientific journals is very high.

I identify myself with those who believe that for an effective program to convey scientific and engineering information to all segments of American enterprise and to identify areas where new advances in science and technology can advantageously be applied, the assistance of the Federal Government as recommended in this bill is desirable and essential.

I hope the committee's study of this most important measure will lead it to a favorable recommendation and report.

STATEMENT BY SENATOR WINSTON L. PROUTY ON S. 949

Because of the intense interest of the people of Vermont in the State Technical Services Act of 1965, I respectfully submit the following statement which expresses my views on the subject.

It is my judgment that this bill is aimed at an important national need. It is a significant step in the right direction.

The proposed act, though modest in scope, has my wholehearted support. The financial support provided is a way the Federal Government may assure itself, the States, and their small independent companies of getting equal effort in continuing research and development across this Nation.

The funds will make it possible for higher institutions to serve the public and to help the small entrepreneur cope with their problems as they emerge. This can be done through programs designed for industries in specific circumstances. Few universities and colleges have the financial reserves to prepare themselves to meet sudden requests from business, industry, and community agencies for tailor-made assistance.

I would like to depart for a moment to call attention to the very fine work that is being done by the University of Vermont in research and development to help speed the economic development of our State. At this point I would appreciate the opportunity of inserting, for the record, the major areas of the services provided for by the bill together with a short listing of current related University of Vermont activities. I feel that this is a valuable contribution to our work here and I am indebted to Warren O. Essler, dean of our college of technology for helping make our record complete.

One of the points I would like to make is that industrial extension in Vermont has operated basically from a rural environment and has developed, as has our society generally, into a most complex kind of activity. It is difficult today to delineate clearly between so-called urban and rural. The State has changed to where the emphasis, while based in agriculture, now is concerned very deeply with industrial and economic growth and development.

It has been said "Progress is the activity of today that is the assurance of tomorrow." Through their joint cooperation, Government, universities, and free enterprise will see to it that this progress continues. It is my hope that we will experience an even greater effort in this direction and that passage of this legislation will enable us to raise the standards of those who still remain outside the mainstream of our dynamic economy. Providing technical self-sufficiency in the hands of American enterprise results in better trained and more productive citizens. The public interest and the self-interest are identical. When such mutuality of purpose exists, real progress is possible. The economic growth provided for in the State Technical Services Act of 1965 promises to hold the promises of our assurances of tomorrow.

TECHNICAL SERVICES ACT 1965

1. Analyzing problems of regions and industries to determine new opportunities for applying technology.
2. Preparing and disseminating technological reports, abstracts, computer tapes, microfilms, reviews, etc.
3. Providing a reference service to identify sources of engineering and scientific expertise.
4. Sponsoring industrial workshops, seminars, and training programs.

UNIVERSITY OF VERMONT

1. Land-use studies and planning by agricultural extension for uses which indicate recreation.
2. The computer center at University of Vermont has disseminated information on the use of electronic computers and has made its library of special programs available to industry. Industry has used the university computer center.
3. (a) Members of the faculty and administration are frequently sought out for advice or names of consultants in special fields.
(b) Testing services that are not commercially available in the region are provided by the university. Example: Concrete testing service used by contractors, architects, etc.

(c) University of Vermont's College of Technology maintains a list of all engineers in the State and publishes a calendar of engineering society activities.

4. The following is a partial list of recent activities of the evening division :

- (a) Accounting and bookkeeping seminars.
 - (b) AIV industrial show.
 - (c) Professional licensing course.
 - (d) Special structural design course related to civilian defense.
-

STATEMENT OF THE NATIONAL ASSOCIATION OF MANUFACTURERS

The National Association of Manufacturers appreciates this opportunity to present its views with respect to the State Technical Services Act of 1965, S. 949. The purpose of this bill is "to promote economic growth by supporting State and regional centers to place the findings of science usefully in the hands of American enterprise."

We agree with the framers of this proposed legislation that "wider diffusion and more effective application of science and technology in industry are essential to the growth of the economy." We do not agree, however, that the proposed legislation is the only or the best means of accomplishing that purpose.

Some supporters of the proposed legislation believe, according to testimony now in the record, that the primary intention of the bill is to provide a "technical information dissemination program." The U.S. Department of Commerce established recently a Clearinghouse for Federal Scientific and Technical Information to disseminate to scientists, engineers, librarians, and management, through a monthly publication, new, unclassified Government technical information. It will contain an unduplicated index of the records of the Atomic Energy Commission, the National Aeronautics and Space Administration, and the Department of Defense. In addition, there are more than 2,600 business and professional publications, serving every conceivable occupation, issued regularly in the United States. Their purpose is to inform those interested in the field of the latest technological developments through articles and advertisements.

Scientific and engineering information, it seems to us, is more widely available today than ever before. If additional dissemination of information was all that was deemed necessary, such a program could be more readily and economically established through State or regional offices of the U.S. Department of Commerce. These offices could gather the material and make it available to all.

The major thrust of the proposed legislation, however, is to make the available scientific and engineering information useful. To this purpose, seminars, workshops, training programs, extension courses, and demonstrations to make the "technical reports, abstracts, computer tapes, microfilm, reviews, and similar scientific and engineering information" more effective are proposed. This, in effect, calls for an education program.

In recognition of this, the bill provides dollar-for-dollar matching grants by the Department of Commerce to the States for the establishment of a technical services program in a university, preferably a State university, or land-grant college. We understand that the total cost of the program would be in the neighborhood of \$70 to \$80 million annually.

The Association of State Universities and Land-Grant Colleges in its support of the proposed act cited the need for large scale research and development, and stated, "The university can perform for industry the same R. & D. function they have performed so effectively for agriculture." Others testifying on behalf of universities referred to services that could be provided to business, such as, "research and assistance on technical problems," and "to conduct research and testing programs where necessary."

These institutions, in making the dissemination of the technical information useful to industry, recognize that research, development, and testing are necessary to convert our scientific advances to effective commercial application though these activities are not mentioned specifically under the broad programs to be established under section 2(a) (4) of the proposed bill. To the extent they would

be allowed to perform such services with the assistance of Government funds they would be competing with private organizations offering similar services.

Section 5(e) of the bill is designed to prevent any of the broad programs stated in the bill from competing with private enterprise. It provides that the designated institution certify it has "determined that such technical services program does not provide a service performed *as practicably* [emphasis added] by private technical services, professional consultants, or private institutions." The phrase, "as practicably" is subject to such broad interpretation that State administrators would have almost unlimited discretion. In fact, lower cost, brought about by the subsidization, would undoubtedly be sufficient justification for institution of the proposed programs. (This alleged safeguard then provides little, if any, actual protection.)

We understand that limited programs of the nature of those to be established by the proposed bill have been operated by some States for a number of years. In addition, numerous colleges and universities offer day and evening extension courses covering a broad range of technologies. Thus, with a high level of technological education available to the businessman if he so desires, the need for this legislation has not been sufficiently justified in our opinion.

We submit that it is not the lack of programs or dissemination of information that limits the growth potential of small business. It is a well documented fact that small business problems center around two factors—lack of management skills, and inadequate financing.

One of the stated underlying assumptions for the need of such a program was contained in the 1964 Economic Report of the President.

"The Federal Government provides major support for the research and development which underlies our striking technological advances. In the past, much of our research and development has been connected with national defense. Now, as military outlays level off, we face

"* * * a challenge to apply the Nation's growing scientific and engineering resources to new socially profitable uses;

"* * * an opportunity to accelerate the technological progress of our civilian industries."

Approximately \$15 billion is spent annually by the Federal Government for research and development for national security and about \$5 billion is spent by industry for civilian or commercial purposes.

However, under Government research and development contracts the Government in most cases owns the patents to new inventions which were derived from such expenditures and today the Government owns more patents than anyone else. From time to time the Senate has adopted amendments to bills—which provide Government funds for research and development—that require the Government to take title to all patents resulting therefrom, except under unusual circumstances. A bill, S. 1899, to this effect has been introduced in the Senate.

It is a rare instance that an invention made in pursuit of national security requirements can be adapted for civilian or commercial use without the expenditure of considerable time and money for further research and development. However, if the Government owns the patent, there is little incentive to make these expenditures if the patent right to exclude others from using the invention is not exercisable. The rights to Government-owned patents are available to all, but the incentive to risk funds to develop and market such inventions is lacking.

Should Government patent policy, now subject of hearings in the Senate, result in an act to vest the patent rights in most cases in private hands, rather than Government, large research efforts and funds would be employed to transfer the new scientific and engineering discoveries to useful civilian needs. This effort and expenditure would dwarf those contemplated in the proposed legislation.

Since dissemination of technical information is more widely available than ever before, and since no effective safeguard is provided in the bill to prevent subsidized competition to private industry, and since this bill misreads the primary needs of small business, and since "more effective application of science and technology in industry" can be accomplished readily by revision of Government patent policy, we believe the proposed State Technical Services Act of 1965 is an unnecessary Federal operation and should not be enacted.

CHAMBER OF COMMERCE OF THE UNITED STATES,
Washington, D.C., June 18, 1965.

Senator WARREN G. MAGNUSON,
Chairman, Senate Commerce Committee,
U.S. Senate,
Washington, D.C.

DEAR MR. CHAIRMAN: This letter is to express the position of the Chamber of Commerce of the United States on S. 949, the proposed State Technical Services Act of 1965. We understand that hearings on the legislation are completed but we would appreciate this letter being included in the record of hearings.

While there is a definite need for better dissemination and utilization of the results of this Nation's scientific and technical efforts, particularly programs supported with public funds, we doubt that the State technical service program proposed in S. 949 will accomplish this objective until two conditions are met.

First, the definitive needs of the individual States and/or regions must be carefully assessed. Second, plans must be prepared to effectively disseminate information and to provide realistic technical services to industry, based on industry needs.

The national chamber supports enactment of provisions in S. 949 calling for the development of State and/or regional plans, with limited Federal assistance, which will:

1. Outline the technological and economic conditions of a State, taking into account its region, its industry, and its industrial potential, and which will identify the major regional and industrial problems.

2. Identify the general, as well as specific, approaches and methods to be used in the solution of these problems and outline the means for measuring the impact of such assistance on the State or regional economy.

3. Explain the methods to be used in administering and coordinating State technical programs within the State or region.

The chamber further recommends that Federal support of this initial needs-definition and planning phase be limited as follows:

The Secretary of Commerce should be authorized to pay an amount not to exceed \$25,000 a year for each of the first 3 fiscal years to each State to assist in the preparation of the first 5-year plan. Unlike the present provisions of S. 949, these payments should be limited to amounts which the States themselves are willing to match on a dollar-for-dollar basis.

In summary, a federally sponsored State technical services program should be based on the results of an objective analysis of the needs-definition and planning phase, which the national chamber supports.

Sincerely,

Theron J. Rice,
Legislative General Manager.

THE PENNSYLVANIA STATE UNIVERSITY,
University Park, Pa., June 7, 1965.

Senator WARREN G. MAGNUSON,
Chairman, Committee on Commerce,
U.S. Senate, Washington, D.C.

DEAR SENATOR MAGNUSON: Attached is the statement I have prepared for the hearings before your committee in connection with the proposed State Technical Services Act, S. 949. I am sorry that I will be unable to be present at these hearings.

Sincerely yours,

ERIC A. WALKER, President.

Attachment.

STATEMENT OF DR. ERIC A. WALKER, PRESIDENT, PENNSYLVANIA STATE
UNIVERSITY, AND CHAIRMAN, NATIONAL SCIENCE BOARD

I have been asked to testify before this committee regarding the proposed State Technical Services Act, S. 949, and I am especially happy to do so. For many years I have been conscious of the need for providing some effective means of taking the discoveries of scientific research directly to business and

industry, where this knowledge can be put to use in the creation of goods and services for the enrichment of our lives and the growth of the national economy. This bill proposes such a mechanism.

Indeed, almost 5 years ago, in an address at the 74th annual meeting of the American Association of Land-Grant Colleges and State Universities, I advocated the establishment of a university extension service for this purpose similar to the agricultural extension programs of our land-grant colleges that have been operating so successfully for three-quarters of a century. Let me quote from that speech.

"Research is no longer the private property of a handful of savants. Rather it has become an economic and political necessity, and the scientist and the research worker have become, whether they like it or not, deeply involved in the affairs of the world and of men. But the overall problem remains of working out arrangements under which the Nation can secure the research assistance it needs from the universities without weakening the ability of these institutions to perform their essential educational functions or the unique qualities that led to university participation in the first place.

"In casting about for models on which to base these arrangements, most people have almost completely overlooked the oldest active program of this sort in the country—the Federal support program for agricultural research. Through this program the Federal Government has been providing research grants-in-aid to the agricultural experiment stations at our land-grant institutions continuously since 1887.

"The success of this program is well known. The increase in efficiency of American farmers—that is, the output per man-hour has almost doubled that of manufacturing workers. They have achieved this record through a system that places program initiative directly in local hands and provides built-in program continuity. Further, the research effort carried out through this system is integrated with the instructional programs of the institutions involved and has strengthened rather than weakened them. In this program, it is clear, both the Government and the universities have been well served. It could provide us with the model we are looking for. Our job is simply to work out satisfactory mechanisms. In the economic and political realities under which we live, we shall have to work them out."

The need for working out such mechanisms is even greater today than it was then.

During World War II, our successful experiment of applying scientific knowledge to the solution of the technical problems of war started us on a large-scale program of scientific research and development which was clearly aimed at accomplishing practical ends. Toward the end of the war, President Roosevelt turned to Vannevar Bush, then Director of the wartime Office of Scientific Research and Development, and asked him whether the "unique experiment of teamwork and cooperation" that had been so successful in ending the war could not be profitably employed in meeting some of the problems that the peace was likely to bring. He said: "The information, the techniques, and the research experience developed by the Office of Scientific Research and Development and by the thousands of scientists in the universities and private industry, should be used for the improvement of national health, the creation of new enterprises bringing new jobs, and the betterment of the national standard of living."

Dr. Bush's famous report, "Science, the Endless Frontier," laid out a plan by which, in his opinion, these objectives might be realized. Among other things, he proposed that the Government should extend substantial financial support to research in the colleges and universities of the Nation. "To create more jobs," he said, "we must make new and better and cheaper products. We want plenty of new, vigorous enterprises. But new products and processes are not born full grown. They are founded on new principles and new conceptions which in turn result from basic scientific research. Clearly, more and better scientific research is one essential to the achievement of our goal of full employment."

To both President Roosevelt and Dr. Bush, the justification for conducting large scale research lay in the fact that it was "the key to our security as a nation, to our better health, to more jobs, to a higher standard of living, and to our cultural progress."

It is not necessary for me to remind you how seriously the Nation has taken Dr. Bush's recommendations. The modest \$570 million spent in this country in 1940 on research and development will this year reach an estimated \$21 billion—a sum more than twice our 1940 Federal budget. And there is no gain

saying the fact that the country has reaped untold benefits from its massive commitment to scientific research. But it is also true that we are beginning to recognize that the practical developments which seemed to be so obviously a consequence of the accumulation of basic knowledge have in many areas failed to keep pace with the growth of the knowledge.

If we can congratulate ourselves on the great strides we have taken in accumulating new knowledge, we must also recognize the fact that we have failed to use this knowledge with complete effectiveness in the creation of end products that our society needs and wants. Many of our large industrial organizations, of course, are well equipped to carry the process through to completion. They have their own research laboratories and engineering departments which work hand in hand to search out the knowledge they need and quickly convert it to the practical products of the marketplace. Or they are able to contract with colleges and universities for the research necessary to enable them to do the job.

But there are many small businesses and industries throughout the country that cannot conduct the research necessary to keep their products up to date, to provide for healthy expansion, or even to meet the competition of their larger competitors. Yet it is on the continued growth of these small businesses that a flourishing economy directly depends. And in many cases the knowledge that we are so rapidly accumulating in our scientific laboratories is exactly what these organizations need. Some efforts have of course been made to disseminate this knowledge. NASA, for example, has been conscious of the problem and has attempted a solution. And many of our universities have tried in a small way to help. But what is needed is a substantial coordinated effort at the national level.

The success over the years of the agricultural extension services of our land-grant colleges is an indication of the potential effectiveness of such a large-scale program for the diffusion and use of scientific knowledge. I am convinced that the present proposal can be made to serve with similar effectiveness for business and industry. Let me say that I heartily endorse this proposal and that if this bill is enacted, the Pennsylvania State University will be eager to do its part in making the program a success.



LEGISLATIVE HISTORY

Public Law 89-182
S. 949

TABLE OF CONTENTS

Index and summary of S. 949	1
Digest of Public Law 89-182.	2

INDEX AND SUMMARY OF S. 949

Jan.	25, 1965	Rep. Harris introduced H. R. 3420 which was referred to House Interstate and Foreign Commerce Committee. Print of bill as introduced.
Feb.	2, 1965	Sen. Magnuson introduced and discussed S. 949 which was referred to Senate Commerce Committee. Print of bill and remarks of author.
June	22, 1965	Senate committee voted to report S. 949.
July	1, 1965	Senate committee reported S. 949 with amendments. S. Report 421. Print of bill and report.
July	19, 1965	Senate passed S. 949 as reported.
July	20, 1965	S. 949 was referred to H. Interstate and Foreign Commerce Committee. Print of bill.
July	29, 1965	House committee voted to report H. R. 3420.
Aug.	17, 1965	House committee voted to report H. R. 3420.
Aug.	19, 1965	House committee reported H. R. 3420 with amendments. H. Report 817. Print of bill and report.
Aug.	26, 1965	Rules Committee reported resolution for the Consideration of H. R. 3420. H. Res. 548, H. Report 885. Print of resolution and report.
Sept.	1, 1965	House passed S. 949 with amendment (in lieu of H. R. 3420). H. R. 3420 tabled due to passage of S. 949.
Sept.	7, 1965	Senate concurred in House amendments to S. 949.
Sept.	14, 1965	Approved: Public Law 89-182.

Hearings: S. Commerce Committee on S. 949.

H. Interstate and Foreign Commerce
on H. R. 3420.

DIGEST OF PUBLIC LAW 89-182

STATE TECHNICAL SERVICES ACT OF 1965.

Authorizes the Secretary of Commerce to make matching grants to States to provide a wider diffusion of science and technology in business, commerce, and industry by means of federally supported State action. Defines technical services as activities or programs designed to enable businesses, commerce, and industrial establishments to acquire and use scientific and engineering information more effectively, such as disseminating technical information by means of reports, computer tapes, microfilms and reviews, and the establishment of State or interstate technical information centers; providing a reference service to identify sources of scientific and engineering information; and sponsoring industrial workshops, seminars, training programs, extension courses, demonstrations, and field visits to encourage more effective application of technology.

H. R. 3420

IS THE WORK OF ADMINISTRATIVE

January 25, 1906

The House, reporting the foregoing bill, passed and referred to the Senate
under the Constitution and Treaty, February

A BILL

To provide for the establishment of a Department of Agriculture and to
provide for the establishment of a Department of Commerce and
to provide for the establishment of a Department of Education

Enacted by the Senate and House of Representatives
of the United States of America in Congress assembled

89TH CONGRESS
1ST SESSION

H. R. 3420

IN THE HOUSE OF REPRESENTATIVES

JANUARY 25, 1965

Mr. HARRIS introduced the following bill; which was referred to the Committee on Interstate and Foreign Commerce

A BILL

To promote economic growth by supporting State and regional centers to place the findings of science usefully in the hands of American enterprise.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

3 DECLARATION OF PURPOSE

4 SECTION 1. That Congress finds that wider diffusion and
5 more effective application of science and technology in indus-
6 try are essential to the growth of the economy, to higher
7 levels of employment and to the competitive position of
8 United States products in world markets. The Congress
9 also finds that the benefits of federally financed research,
10 as well as other research, must be placed more effectively

1 in the hands of American business and enterprise. The
2 Congress further finds that the several States through co-
3 operation with universities, communities, and industries can
4 contribute significantly to these purposes by providing tech-
5 nical services designed to encourage a more effective appli-
6 cation of science and technology to both new and established
7 industries. The Congress, therefore, declares that the pur-
8 pose of this Act is to provide a national program of incentives
9 and support for the several States individually and in co-
10 operation with each other in their establishing and main-
11 taining State and regional technical service programs de-
12 signed to achieve these ends.

13 DEFINITIONS

14 SEC. 2. For the purposes of this Act—

15 (a) “Technical services” means activities or programs
16 designed to enable businesses and industries to acquire and
17 use scientific and engineering information more effectively
18 through such means as—

19 (1) analyzing problems of regions and industries to
20 determine new opportunities for applying technology;

21 (2) preparing and disseminating technical reports,
22 abstracts, computer tapes, microfilm, reviews and similar
23 scientific or engineering information, including the estab-
24 lishment of State or regional technical information cen-
25 ters for this purpose;

(3) providing a reference service to identify sources of engineering and other scientific expertise; and

(4) sponsoring industrial workshops, seminars, training programs, extension courses, demonstrations and field visits designed to encourage the more effective application of scientific and engineering information.

(b) "Designated institution" means the institution or agency in each participating State, which has been designated as administrator of the program for such State under section 3 of this Act.

(c) "Qualified institution" means (1) an institution of higher learning with a program leading to degrees in engineering or business administration which is accredited by a nationally recognized accrediting agency or association to be listed by the United States Commissioner of Education, or such an institution which is listed separately after evaluation by the United States Commissioner of Education pursuant to this subsection; or (2) a State agency or a private, nonprofit institution which meets criteria of competence established by the Secretary of Commerce and published in the Federal Register. For the purpose of this Act, the United States Commissioner of Education shall publish a list of nationally recognized accrediting agencies or associations which he determines to be reliable authority as to the quality of engineering or business education or

1 training offered. When the Commissioner determines that
2 there is no nationally recognized accrediting agency or asso-
3 ciation qualified to accredit such programs, he shall publish
4 a list of institutions he finds qualified after prior evaluation
5 by an advisory committee, composed of persons he deter-
6 mines to be specially qualified to evaluate the training pro-
7 vided under such programs.

8 (d) "Participating institution" means each qualified
9 institution in a State, which participates in the administra-
10 tion or execution of the State technical services program
11 as provided by this Act.

12 (e) "Secretary" means the Secretary of Commerce or
13 the official to whom the Secretary has delegated all or part
14 of the authority in this Act.

15 (f) "State" means one of the States of the United
16 States, the District of Columbia, the Commonwealth of
17 Puerto Rico, or the Virgin Islands.

18 PLANS AND PROGRAMS

19 SEC. 3. Any State which wishes to receive Federal
20 payments under this Act in support of its existing or planned
21 technical services program shall designate, under appropri-
22 ate State laws and regulations, an institution or agency to
23 administer and coordinate that program and to prepare and
24 submit plans and programs to the Secretary of Commerce
25 for approval under this Act. If the institution or agency

1 designated by each State is not a State university or land-
2 grant college entitled to benefits under the Act approved
3 July 2, 1862, or the Act of August 30, 1890, and Acts
4 amendatory and supplementary thereto (1 U.S.C. 301-
5 329), the Governor or other competent State authority
6 shall furnish the Secretary a written statement of his reasons
7 for designating such other institution or agency.

8 SEC. 4. The designated institution shall prepare and
9 submit to the Secretary in accordance with such regulations
10 as he may publish—

11 (a) At the beginning of each five-year period, a five-
12 year plan which may be revised annually and which shall
13 (1) outline the technological and economic conditions of
14 the State taking into account its region, its industry, and
15 its industrial potential and identify the major regional and
16 industrial problems; (2) identify the general approaches
17 and methods to be used in the solution of these problems
18 and outline the means for measuring the impact of such
19 assistance on the State or regional economy; and (3) ex-
20 plain the methods to be used in administering and coordi-
21 nating the program.

22 (b) An annual technical services program which shall
23 (1) identify specific methods, which may include contracts,
24 for accomplishing particular goals and outline the likely im-

1 pact of these methods in terms of the five-year plan; (2)
2 contain a detailed budget, together with procedures for ade-
3 quate fiscal control, fund accounting, and auditing, to assure
4 proper disbursement for funds paid to the State under this
5 Act; and (3) indicate the specific responsibilities assigned
6 to each participating institution in the State.

7 SEC. 5. The Secretary shall not accept a five-year plan
8 for review and approval under this Act unless the Governor
9 of the State or his designee determines and certifies that the
10 plan is consistent with State policies and objectives; and the
11 Secretary shall not accept an annual technical services pro-
12 gram for review and approval under this Act unless the
13 designated institution has, as certified thereto by the Governor
14 or his designee—

15 (a) invited all qualified institutions in the State to
16 submit proposals for providing technical services under
17 the Act;

18 (b) coordinated its programs with other States and
19 with other publicly supported activities within the State,
20 as appropriate;

21 (c) established adequate rules to insure that no
22 officer or employee of the State, the designated institu-
23 tion or any participating institution, shall receive com-
24 pensation for technical services for which funds are
25 provided under this Act from sources other than his

1 employer and shall not otherwise maintain any private
2 interest in conflict with his public responsibility;

3 (d) determined that matching funds will be avail-
4 able from State or non-Federal sources;

5 (e) determined that such technical services pro-
6 gram does not provide a service performed as practicably
7 by private technical services, professional consultants or
8 private institutions;

9 (f) planned no services specially related to a par-
10 ticular firm or company except insofar as the services are
11 of general concern to the community, State or region;

12 (g) provided for making public all reports pre-
13 pared in the course of furnishing technical services sup-
14 ported under this Act or for making them available at
15 cost to any person on request.

16 APPROVAL BY SECRETARY OF COMMERCE

17 SEC. 6. The Secretary shall review each five-year plan
18 and each annual program submitted by the designated in-
19 stitution under section 4, or by the regional or interstate
20 institution under section 7, and shall approve only those
21 which (1) bear the certification required by the Governor or
22 his designee under section 5; (2) comply with regulations
23 and meet criteria that the Secretary shall promulgate and
24 publish in the Federal Register; and (3) otherwise accom-
25 plish the purposes of this Act.

1 REGIONAL OR INTERSTATE PROGRAMS

2 SEC. 7. Two or more States may cooperate in adminis-
3 tering and coordinating their plans and programs supported
4 under this Act, in which event all or part of the sums au-
5 thorized and payable under section 11 to all of the cooperat-
6 ing States may be paid to the institutions or persons author-
7 ized to receive them under the terms of the agreement be-
8 tween the cooperating States. When the cooperative agree-
9 ment designates a regional or interstate institution to act on
10 behalf of all of the cooperating States, it shall submit to the
11 Secretary for review and approval under section 6 a regional
12 or interstate five-year plan and annual regional or interstate
13 technical services program which, as nearly as practicable,
14 shall meet the requirements of section 4 and section 5.

15 SEC. 8. Notwithstanding the provisions of section 11,
16 the Secretary is authorized to increase by 10 per centum the
17 amount which he approves for any regional or interstate
18 technical services program submitted under section 7. Such
19 additional amount may be paid without requiring matching
20 funds from State or non-Federal sources.

21 SEC. 9. The consent of the Congress is given to any two
22 or more States to enter into agreements or compacts, not in
23 conflict with any law of the United States, for cooperative
24 efforts and mutual assistance in establishing regional or inter-

1 state institutions under section 7 for accomplishing the pur-
2 poses of this Act.

3 ADVISORY COUNCIL

4 SEC. 10. Each designated institution and each regional
5 or interstate institution shall establish an advisory council
6 for technical services, the members of which shall represent
7 broad community interests and shall be qualified to evaluate
8 programs submitted under section 4. The advisory council
9 shall review each annual program, evaluate its relation to
10 the purposes of this Act, and report its findings to the desig-
11 nated institution and the Governor or his designee. Each
12 report of the advisory council shall be available to the Sec-
13 retary on request.

14 ADMINISTRATION AND PAYMENTS

15 SEC. 11. There is authorized to be appropriated such
16 amounts as may be needed to carry out the purposes set
17 forth in this section.

18 (a) From these amounts, the Secretary is authorized to
19 make an annual payment to each designated institution,
20 regional or interstate institution, or person authorized to
21 receive payments in support of each approved technical
22 services program. Maximum amounts which may be paid
23 to the States under this subsection shall be fixed in accord-

1 ance with regulations which the Secretary shall promulgate
2 and publish in the Federal Register from time to time, con-
3 sidering (1) population according to the last decennial
4 census; (2) industrial and economic development and pro-
5 ductive efficiency; and (3) technical resources.

6 (b) The Secretary may reserve an amount equal to
7 not more than 20 per centum of the total amount appropri-
8 ated each year under this section and is authorized to make
9 payments to any designated or participating institution for
10 technical services programs which he determines have special
11 merit or to any qualified institution for additional programs
12 which he determines are necessary to accomplish the pur-
13 poses of this Act, under criteria and regulations that he shall
14 promulgate and publish in the Federal Register.

15 (c) An amount equal to not more than 5 per centum
16 of the total amount appropriated each year under this section
17 shall be available to the Secretary for the direct expenses of
18 administering this Act.

19 (d) No amount paid under subsection (a) shall exceed
20 one-half of the cost of the approved annual technical services
21 program of the State, and for each dollar paid under sub-
22 sections (a) and (b) there shall be available for expenditure
23 on each approved program at least \$1 from State or non-
24 Federal sources: *Provided*, That the Secretary may pay an
25 amount not to exceed \$25,000 a year for each of the first

1 three fiscal years to each designated institution to assist in
2 the preparation of the first five-year plan and the initial
3 annual technical services programs, without regard to any
4 requirement of this section.

5 (e) At the end of each fiscal year, all remaining
6 amounts which are appropriated for payments to the States
7 under subsection (a) and which have not been obligated for
8 payments to the States at that time, shall be available to
9 the Secretary for payments under subsection (b), until
10 expended.

11 SEC. 12. The Secretary is authorized and directed to
12 aid the States and regions in carrying out their technical
13 services programs by providing reference services which a
14 State or region may use to obtain scientific, technical, and
15 engineering information from sources outside the State or
16 region, for the purposes of this Act. There is authorized to
17 be appropriated each fiscal year such amount as may be nec-
18 essary to provide the services authorized in this section.

19 SEC. 13. The Secretary is authorized to establish such
20 policies, standards, criteria, and procedures and to prescribe
21 such rules and regulations as he may deem necessary or
22 appropriate for the administration of this Act.

23 LIMITATIONS

24 SEC. 14. (a) Nothing contained in this Act shall be
25 construed as authorizing a department, agency, officer, or

1 employee of the United States to exercise any direction, su-
2 pervision, or control over, or impose any requirements or
3 conditions with respect to the personnel, curriculum, methods
4 of instructions, or administration of any educational insti-
5 tution.

6 (b) Nothing contained in this Act shall be deemed to
7 affect the functions or responsibilities under law of any other
8 department or agency of the United States.

9 EVALUATION

10 SEC. 15. Within five years from the date of the approval
11 of this Act, and prior to the end of each five-year period
12 thereafter, the Secretary shall appoint a public committee,
13 none of the members of which shall have been directly con-
14 cerned with the preparation of plans, administration of pro-
15 grams or participation in programs under this Act. The
16 committee shall evaluate the significance and impact of the
17 program under this Act and make recommendations con-
18 cerning the program. A report shall be transmitted to the
19 Secretary within sixty days after the end of each five-year
20 period.

21 ANNUAL REPORT

22 SEC. 16. Each designated institution or regional or in-
23 terstate institution shall make an annual report to the Sec-
24 retary on or before the first day of September of each year
25 on the work accomplished under the technical services pro-

1 gram and the status of current services, together with a
2 detailed statement of the amounts received under any of the
3 provisions of this Act during the preceding fiscal year, and
4 of their disbursement.

5 TERMINATION

6 SEC. 17. Whenever the Secretary, after reasonable
7 notice and opportunity for hearing to any institution re-
8 ceiving funds under this Act finds that—

9 (a) the institution is not complying substantially
10 with the provisions of this Act, with the regulations
11 promulgated by the Secretary or with the approved
12 annual technical services program; or

13 (b) any funds paid to the institution under the
14 provisions of this Act have been lost, misapplied, or
15 otherwise diverted from the purposes for which they
16 were paid or furnished

17 the Secretary shall notify such institution that no further
18 payments will be made under the provisions of this Act
19 until he is satisfied that there is substantial compliance or the
20 diversion has been corrected or, if compliance or correction is
21 impossible, until such institution repays or arranges for the
22 repayment of Federal funds which have been diverted or
23 improperly expended.

24 SEC. 18. Upon notice by the Secretary to any insti-
25 tution that no further payments will be made pending sub-

stantial compliance correction or repayment under section 17, any funds which may have been paid to such institution under this Act and which are not expended by the institution on the date of such notice, shall be repaid to the Secretary and be deposited to the account of the appropriations from which they originally were paid.

7	SHORT TITLE
---	-------------

8 SEC. 19. This Act may be cited as the "State Technical
9 Services Act of 1965".

A BILL

To promote economic growth by supporting
State and regional centers to place the find-
ings of science usefully in the hands of
American enterprise.

By Mr. HARRIS

JANUARY 25, 1965

Referred to the Committee on Interstate and Foreign
Commerce

A BILL.

To provide for the better regulation of the
trade in slaves, and to amend the
Act in that behalf made.

Enacted by the

House of Commons

in the

IN THE SENATE OF THE UNITED STATES

FEBRUARY 2, 1965

Mr. MAGNUSON (for himself, Mr. BYRD of West Virginia, and Mr. RIBICOFF)
(by request) introduced the following bill; which was read twice and
referred to the Committee on Commerce

A BILL

To promote economic growth by supporting State and regional
centers to place the findings of science usefully in the hands
of American enterprise.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

3 **DECLARATION OF PURPOSE**

4 **SECTION 1.** That Congress finds that wider diffusion and
5 more effective application of science and technology in in-
6 dustry are essential to the growth of the economy, to higher
7 levels of employment, and to the competitive position of
8 United States products in world markets. The Congress
9 also finds that the benefits of federally financed research, as
10 well as other research, must be placed more effectively in

1 the hands of American business and enterprise. The Con-
2 gress further finds that the several States through coopera-
3 tion with universities, communities, and industries can con-
4 tribute significantly to these purposes by providing technical
5 services designed to encourage a more effective application
6 of science and technology to both new and established in-
7 dustries. The Congress, therefore, declares that the purpose
8 of this Act is to provide a national program of incentives
9 and support for the several States individually and in co-
10 operation with each other in their establishing and maintain-
11 ing State and regional technical service programs designed
12 to achieve these ends.

13 DEFINITIONS

14 SEC. 2. For the purposes of this Act—

15 (a) “Technical services” means activities or programs
16 designed to enable businesses and industries to acquire and
17 use scientific and engineering information more effectively
18 through such means as—

19 (1) analyzing problems of regions and industries to
20 determine new opportunities for applying technology;

21 (2) preparing and disseminating technical reports,
22 abstracts, computer tapes, microfilm, reviews, and similar
23 scientific or engineering information, including the es-
24 tablishment of State or regional technical information
25 centers for this purpose;

1 (3) providing a reference service to identify sources
2 of engineering and other scientific expertise; and

3 (4) sponsoring industrial workshops, seminars,
4 training programs, extension courses, demonstrations, and
5 field visits designed to encourage the more effective appli-
6 cation of scientific and engineering information.

7 (b) "Designated institution" means the institution or
8 agency in each participating State, which has been designated
9 as administrator of the program for such State under section
10 3 of this Act.

11 (c) "Qualified institution" means (1) an institution of
12 higher learning with a program leading to degrees in engi-
13 neering or business administration which is accredited by
14 a nationally recognized accrediting agency or association
15 to be listed by the United States Commissioner of Education,
16 or such an institution which is listed separately after evalua-
17 tion by the United States Commissioner of Education pur-
18 suant to this subsection; or (2) a State agency or a private,
19 nonprofit institution which meets criteria of competence
20 established by the Secretary of Commerce and published in
21 the Federal Register. For the purpose of this Act, the
22 United States Commissioner of Education shall publish a
23 list of nationally recognized accrediting agencies or asso-
24 ciations which he determines to be reliable authority as to
25 the quality of engineering or business education or training

1 offered. When the Commissioner determines that there
2 is no nationally recognized accrediting agency or association
3 qualified to accredit such programs, he shall publish a list of
4 institutions he finds qualified after prior evaluation by an
5 advisory committee, composed of persons he determines to
6 be specially qualified to evaluate the training provided under
7 such programs.

8 (d) "Participating institution" means each qualified
9 institution in a State, which participates in the administration
10 or execution of the State technical services program as pro-
11 vided by this Act.

12 (e) "Secretary" means the Secretary of Commerce or
13 the official to whom the Secretary has delegated all or part
14 of the authority in this Act.

15 (f) "State" means one of the States of the United
16 States, the District of Columbia, the Commonwealth of
17 Puerto Rico, or the Virgin Islands.

18 PLANS AND PROGRAMS

19 SEC. 3. Any State which wishes to receive Federal
20 payments under this Act in support of its existing or planned
21 technical services program shall designate, under appropriate
22 State laws and regulations, an institution or agency to
23 administer and coordinate that program and to prepare and
24 submit plans and programs to the Secretary of Commerce
25 for approval under this Act. If the institution or agency

1 designated by each State is not a State university or land-
2 grant college entitled to benefits under the Act approved
3 July 2, 1862, or the Act of August 30, 1890, and Acts
4 amendatory and supplementary thereto (7 U.S.C. 301-
5 329), the Governor or other competent State authority shall
6 furnish the Secretary a written statement of his reasons for
7 designating such other institution or agency.

8 SEC. 4. The designated institution shall prepare and
9 submit to the Secretary in accordance with such regulations
10 as he may publish—

11 (a) At the beginning of each five-year period, a five-year
12 plan which may be revised annually and which shall: (1)
13 outline the technological and economic conditions of the State,
14 taking into account its region, its industry, and its industrial
15 potential and identify the major regional and industrial
16 problems; (2) identify the general approaches and methods
17 to be used in the solution of these problems and outline the
18 means for measuring the impact of such assistance on the
19 State or regional economy; and (3) explain the methods to
20 be used in administering and coordinating the program.

21 (b) An annual technical services program which shall
22 (1) identify specific methods, which may include contracts,
23 for accomplishing particular goals and outline the likely
24 impact of these methods in terms of the five-year plan;

1 (2) contain a detailed budget, together with procedures for
2 adequate fiscal control, fund accounting, and auditing, to
3 assure proper disbursement for funds paid to the State under
4 this Act; and (3) indicate the specific responsibilities
5 assigned to each participating institution in the State.

6 SEC. 5. The Secretary shall not accept a five-year plan
7 for review and approval under this Act unless the Governor
8 of the State or his designee determines and certifies that the
9 plan is consistent with State policies and objectives; and the
10 Secretary shall not accept an annual technical services pro-
11 gram for review and approval under this Act unless the
12 designated institution has, as certified thereto by the Gov-
13 ernor or his designee—

14 (a) invited all qualified institutions in the State
15 to submit proposals for providing technical services
16 under the Act;

17 (b) coordinated its programs with other States and
18 with other publicly supported activities within the State,
19 as appropriate;

20 (c) established adequate rules to insure that no
21 officer or employee of the State, the designated institu-
22 tion or any participating institution, shall receive com-
23 pensation for technical services for which funds are
24 provided under this Act from sources other than his

1 employer and shall not otherwise maintain any private
2 interest in conflict with his public responsibility;

3 (d) determined that matching funds will be avail-
4 able from State or non-Federal sources;

5 (e) determined that such technical services pro-
6 gram does not provide a service performed as practicably
7 by private technical services, professional consultants, or
8 private institutions;

9 (f) planned no services specially related to a par-
10 ticular firm or company except insofar as the services are
11 of general concern to the community, State, or region;

12 (g) provided for making public all reports pre-
13 pared in the course of furnishing technical services
14 supported under this Act or for making them available
15 at cost to any person on request.

16 APPROVAL BY SECRETARY OF COMMERCE

17 SEC. 6. The Secretary shall review each five-year plan
18 and each annual program submitted by the designated insti-
19 tution under section 4, or by the regional or interstate insti-
20 tution under section 7, and shall approve only those which
21 (1) bear the certification required by the Governor or his
22 designee under section 5; (2) comply with regulations
23 and meet criteria that the Secretary shall promulgate and

1 publish in the Federal Register; and (3) otherwise accom-
2 plish the purposes of this Act.

3 REGIONAL OR INTERSTATE PROGRAMS

4 SEC. 7. Two or more States may cooperate in adminis-
5 tering and coordinating their plans and programs supported
6 under this Act, in which event all or part of the sums author-
7 ized and payable under section 11 to all of the cooperating
8 States may be paid to the institutions or persons authorized
9 to receive them under the terms of the agreement between
10 the cooperating States. When the cooperative agreement
11 designates a regional or interstate institution to act on behalf
12 of all of the cooperating States, it shall submit to the Secre-
13 tary for review and approval under section 6 a regional or
14 interstate five-year plan and annual regional or interstate
15 technical services program which, as nearly as practicable,
16 shall meet the requirements of section 4 and section 5.

17 SEC. 8. Notwithstanding the provisions of section 11,
18 the Secretary is authorized to increase by 10 per centum the
19 amount which he approves for any regional or interstate
20 technical services program submitted under section 7. Such
21 additional amount may be paid without requiring matching
22 funds from State or non-Federal sources.

23 SEC. 9. The consent of the Congress is given to any two
24 or more States to enter into agreements or compacts, not
25 in conflict with any law of the United States, for cooperative

1 efforts and mutual assistance in establishing regional or
2 interstate institutions under section 7 for accomplishing the
3 purposes of this Act.

4 ADVISORY COUNCIL

5 SEC. 10. Each designated institution and each regional
6 or interstate institution shall establish an advisory council
7 for technical services, the members of which shall represent
8 broad community interests and shall be qualified to evaluate
9 programs submitted under section 4. The advisory council
10 shall review each annual program, evaluate its relation to the
11 purposes of this Act, and report its findings to the designated
12 institution and the Governor or his designee. Each report of
13 the advisory council shall be available to the Secretary on
14 request.

15 ADMINISTRATION AND PAYMENTS

16 SEC. 11. There is authorized to be appropriated such
17 amounts as may be needed to carry out the purposes set forth
18 in this section.

19 (a) From these amounts, the Secretary is authorized to
20 make an annual payment to each designated institution,
21 regional or interstate institution, or person authorized to re-
22 ceive payments in support of each approved technical serv-
23 ices program. Maximum amounts which may be paid to
24 the States under this subsection shall be fixed in accordance
25 with regulations which the Secretary shall promulgate and

1 publish in the Federal Register from time to time, consider-
2 ing (1) population according to the last decennial census;
3 (2) industrial and economic development and productive
4 efficiency; and (3) technical resources.

5 (b) The Secretary may reserve an amount equal to not
6 more than 20 per centum of the total amount appropriated
7 each year under this section and is authorized to make pay-
8 ments to any designated or participating institution for tech-
9 nical services programs which he determines have special
10 merit or to any qualified institution for additional programs
11 which he determines are necessary to accomplish the pur-
12 poses of this Act, under criteria and regulations that he shall
13 promulgate and publish in the Federal Register.

14 (c) An amount equal to not more than 5 per centum
15 of the total amount appropriated each year under this section
16 shall be available to the Secretary for the direct expenses
17 of administering this Act.

18 (d) No amount paid under subsection (a) shall exceed
19 one-half of the cost of the approved annual technical services
20 program of the State, and for each dollar paid under sub-
21 sections (a) and (b) there shall be available for expendi-
22 ture on each approved program at least \$1 from State or
23 non-Federal sources: *Provided*, That the Secretary may
24 pay an amount not to exceed \$25,000 a year for each of the
25 first three fiscal years to each designated institution to assist

1 in the preparation of the first five-year plan and the initial
2 annual technical services programs, without regard to any
3 requirement of this section.

4 (e) At the end of each fiscal year, all remaining
5 amounts which are appropriated for payments to the States
6 under subsection (a) and which have not been obligated
7 for payments to the States at that time, shall be available to
8 the Secretary for payments under subsection (b), until
9 expended.

10 SEC. 12. The Secretary is authorized and directed to
11 aid the States and regions in carrying out their technical
12 services programs by providing reference services which a
13 State or region may use to obtain scientific, technical, and
14 engineering information from sources outside the State or
15 region, for the purposes of this Act. There is authorized
16 to be appropriated each fiscal year such amount as may be
17 necessary to provide the services authorized in this section.

18 SEC. 13. The Secretary is authorized to establish such
19 policies, standards, criteria, and procedures and to prescribe
20 such rules and regulations as he may deem necessary or
21 appropriate for the administration of this Act.

22 LIMITATIONS

23 SEC. 14. (a) Nothing contained in this Act shall be
24 construed as authorizing a department, agency, officer, or
25 employee of the United States to exercise any direction,

1 supervision, or control over, or impose any requirements or
2 conditions with respect to the personnel, curriculum, methods
3 of instructions, or administration of any educational institu-
4 tion.

5 (b) Nothing contained in this Act shall be deemed to
6 affect the functions or responsibilities under law of any other
7 department or agency of the United States.

8 EVALUATION

9 SEC. 15. Within five years from the date of the approval
10 of this Act, and prior to the end of each five-year period
11 thereafter, the Secretary shall appoint a public committee,
12 none of the members of which shall have been directly con-
13 cerned with the preparation of plans, administration of pro-
14 grams or participation in programs under this Act. The
15 Committee shall evaluate the significance and impact of the
16 program under this Act and make recommendations concern-
17 ing the program. A report shall be transmitted to the Sec-
18 retary within sixty days after the end of each five-year
19 period.

20 ANNUAL REPORT

21 SEC. 16. Each designated institution or regional or inter-
22 state institution shall make an annual report to the Secretary
23 on or before the first day of September of each year on the
24 work accomplished under the technical services program
25 and the status of current services, together with a detailed

1 statement of the amounts received under any of the provi-
2 sions of this Act during the preceding fiscal year, and of
3 their disbursement.

4 TERMINATION

5 SEC. 17. Whenever the Secretary, after reasonable notice
6 and opportunity for hearing to any institution receiving funds
7 under this Act finds that—

8 (a) the institution is not complying substantially
9 with the provisions of this Act, with the regulations pro-
10 mulgated by the Secretary or with the approved annual
11 technical services program; or

12 (b) any funds paid to the institution under the pro-
13 visions of this Act have been lost, misapplied, or other-
14 wise diverted from the purposes for which they were
15 paid or furnished—

16 the Secretary shall notify such institution that no further
17 payments will be made under the provisions of this Act
18 until he is satisfied that there is substantial compliance or
19 the diversion has been corrected or, if compliance or correc-
20 tion is impossible, until such institution repays or arranges
21 for the repayment of Federal funds which have been di-
22 verted or improperly expended.

23 SEC. 18. Upon notice by the Secretary to any institu-
24 tion that no further payments will be made pending substan-
25 tial compliance correction or repayment under section 17,

1 any funds which may have been paid to such institution under
2 this Act and which are not expended by the institution on
3 the date of such notice, shall be repaid to the Secretary
4 and be deposited to the account of the appropriations from
5 which they originally were paid.

6 **SHORT TITLE**

7 SEC. 19. This Act may be cited as the "State Technical
8 Services Act of 1965".

A BILL

To promote economic growth by supporting State and regional centers to place the findings of science usefully in the hands of American enterprise.

By Mr. MAGNUSON, Mr. BYRD of West Virginia,
and Mr. RUPICOFF

FEBRUARY 2, 1965

Read twice and referred to the Committee on
Commerce

upon all persons deriving title from either or both governments subsequent to the effective date of this Act: *Provided*, That the United States, the State of Alaska, or any other affected party may obtain judicial review of any determination by filing a petition for that purpose in the United States District Court for the District of Alaska within one year after the publication of such determination in the Federal Register. Such judicial review shall be on the basis of the record.

SOIL MAPS AND SUBURBS

Mr. WILLIAMS of New Jersey. Mr. President, I reintroduce for appropriate reference a bill to strengthen and improve the program of the Soil Conservation Service.

This bill has as its major objective the aid to planning of new suburban growth on what is now rural farmland.

My own State clearly demonstrates the urgent need for such action. New Jersey in 1970 will have increased its population by 25 percent to about 7.6 million. In the midst of this population explosion brought on by growing urbanization, the trend to suburban development will increase very rapidly. At this moment, however, our knowledge of soils data, septic systems, and general land capabilities cannot hope to keep pace with these changes unless our conservation services are expanded and improved.

In the past Congress has not overlooked this need. Many years ago it created the Soil Conservation Service within the Department of Agriculture to answer the national demand for reliable soils data. This agency has done excellent pioneer work in this important field, but it is hampered by limited resources, and the necessity of directing most of its efforts toward agricultural problems.

Under these adverse conditions the Soil Conservation Service has nevertheless succeeded in drawing up soil maps of over 20 percent of the acreage in the continental United States and has thereby provided farmers with vital information about the nature and value of their land.

The assistance which the farmer has received must now be given to the suburban dweller if he is going to be able to plan safely and confidently for his own future. Thousands of new homes will spring up in all parts of the Nation during the next few years, and community leaders must be equipped to deal with the numerous problems of sanitation and waste disposal which this will present.

Their difficulties can be eased, and the well-being of millions of our future homeowners will be protected if we take steps now to find out more about the land on which we live.

New Jersey must rely now on eight soil scientists to accomplish work in 15 years which could be done in 5 with the help of a few more such specialists.

This bill would enable the mobilization of additional needed manpower and would clear up the present confusion in the laws under which the Soil Conservation Service is now directed to act.

Considering the magnitude of this task and the comparatively slight cost of putting existing machinery in motion, I urge the Senate to give this bill prompt and favorable consideration.

The VICE PRESIDENT. The bill will be received and appropriately referred.

The bill (S. 947) to authorize the Secretary of Agriculture to cooperate with States and other public agencies in planning for changes in the use of agricultural land in rapidly expanding urban areas and in other nonagricultural use areas, and for other purposes, introduced by Mr. WILLIAMS of New Jersey, was received, read twice by its title, and referred to the Committee on Agriculture and Forestry.

AMENDMENT OF SECTION 2 OF EXPORT CONTROL ACT OF 1949

Mr. WILLIAMS of New Jersey. Mr. President, on September 24, 1964, I submitted an amendment to the Export Control Act of 1949 (S. 3220) which would once and for all give American businessmen the protection they so urgently need to withstand the Arab boycott of firms dealing with Israel. I wish to reintroduce that bill today and to reclarify some of the conditions which dictate its passage.

The Arab States insist that they are still at war with Israel. Sometimes they act as though they are indeed still at war—for instance, in their costly schemes to stop Israel's water development with no ostensible advantage to themselves. Sometimes they act as though the war is over, as in the unperturbed entrance of Jordanians into Israel during the Pope's visit to that country. However, despite inconsistencies in actual policy, the Arabs always say that they are at war with Israel. They say it in the United Nations, at length, every year; they say it in their own newspapers and on every public occasion. What is more, they seem to expect the rest of the world to respect their belligerency.

This continuing hostility has caused difficult policy problems for the United States. We have strongly supported Israel's economic and political development since her creation.

As a nation we have sympathized with Israel's efforts to build democracy from the ashes of totalitarianism, in an area of the world where democracy has rarely succeeded. We have likewise looked favorably on any and all efforts of Arab leaders to improve the lot of their people. Our aid has poured into the Near East. Whether or not they think so, we have tried to help the Arabs to help themselves.

But our goodwill is often negated, because the Arabs maintain that it is impossible to remain friendly to both sides. They maintain that any American support for Israel's democracy is an American blow against the Arab world. In private, Arab leaders may acknowledge the opposite; in public, however, they shout the old axiom, "The friend of my enemy is my enemy" and the Arab masses believe them.

The Arab boycott of American firms dealing with Israel is one product of this public attitude; it has been officially neglected for too long; it is beginning to damage the domestic morale and worldwide dignity of the American business

community; we have been remiss in letting it go this far; we must stop it now.

Briefly, the boycott operates in this manner. The central boycott office in Damascus, an arm of the Arab league, writes to the American businessman, threatening him with boycott in 13 Arab States unless he answers an enclosed questionnaire about his dealings with Israel. And he had better answer it to the satisfaction of the Arab boycott office.

If I may, Mr. President, I would like to read the list of questions which the boycott office has the effrontery to ask. I ask unanimous consent that this insulting questionnaire be inserted in the Record at this point in my remarks.

There being no objection, the questionnaire was ordered to be printed in the Record, as follows:

ARAB BOYCOTT QUESTIONS

1. Do you now or did you ever have branch factories in Israel? In case you did in the past, or do now, please define the relationship of such branch with your company.
2. Do you now or did you ever have assembly plants in Israel?
3. Do you now or did you ever have in Israel general agencies head offices for your Middle Eastern operations?
4. Have you ever granted the right of using your patents, trademarks, copyrights, etc., to Israeli persons or firms?
5. Have you ever owned shares or any other interest in Israeli firms or businesses?
6. Have you ever rendered consultative services or technical assistance to an Israeli firm or business?
7. Do you now or did you ever represent any Israeli firm or other business in your country or elsewhere? In case you did in the past, or do now, please furnish us with the names and addresses of such Israeli firms or businesses.
8. Do you have a branch of yours in Israel? In case you have, please define the relationship of such branch with your firm.

Mr. WILLIAMS of New Jersey. Mr. President, is it tolerable for an American businessman to be threatened with loss of his operations in the Arab world unless he ceases dealing with a country friendly to the United States? Is it tolerable for that businessman to be blackmailed into answering utterly private questions about his connections with Israel, and his plans for the future?

No one here today is arguing the ability of Arab governments to impose restrictions of trade upon Arab businessmen who might otherwise do business with Israel. But when the Arab world succeeds in imposing such restrictions on American firms, something is wrong. And when the U.S. Government can do nothing more to assist these firms than to say it does not condone the boycott, something is rotten.

Business International reported that as of January 1964, 164 American firms were on the blacklist. Fifty-three of them have been on since 1959 or before; 31 made it in 1961 and 1962; 33 made it by November 1963. In one case, a particularly vulnerable firm supplying parts for products distributed in the Arab world was made to leave its Israel operation through a secondary boycott—the Arabs put pressure on the customers and the customers, in self-defense, put pressure on the supplier. Thus blackmail breeds

more subtle blackmail; the businessman, without protection from his own country's laws, is placed in a position where both his dignity and his principles can be all too easily compromised.

It has been the policy of this Nation to protect its citizens wherever they are in danger. We protect them when they are held hostage to war in the Congo; we protect them when their holdings abroad are nationalized by making our aid contingent upon adequate compensation for expropriation.

Why should we make an exception for the Arab war against Israel? Every time a friendly nation wishes to make war on another friendly nation, shall we permit our business community to be caught in the path of the attack while our Government remains neutral?

Now that boycott office in Damascus is an Arab League office; its threats receive lipservice from sovereign Arab States, but Arab governments can and do differ with its policies. The sophisticated businessman might know full well that it takes more than a recommendation from the Arab League to make good a threat or a promise. But the individual businessman cannot know, except by costly and extensive investigation, whether the sovereign Arab States will accept or disregard Damascus directives; he is on unsafe ground; his decision whether or not to defy the boycott is a nerve-racking one.

One businessman may receive letters from several different boycott offices, because individual States maintain their own. In addition he may receive a covering letter from the Arab firm with which he plans to do business. An American company is more likely to be intimidated by this welter of documents than to understand that it implies chaos among Arab authorities. He has no defense against the intimidation; his government has provided him with no defense. Is it any wonder that, although he knows the Arabs have no right to blackmail him in this way, he may permit himself to be blackmailed?

Now it is a fact that many American firms are defying the boycott. This fact testifies to the strong belief of our business community in freedom of trade and to that community's determination to stand up to an irritating and continuous barrage. These firms have learned to live with the boycott; they have found ways to circumvent it; they have learned not to advertise the fact that they do business with both sides, out of practical respect for Arab sensitivities; they have learned to hide the fact that a boycott office which publicly threatens them privately agrees to leave them alone. Israel has learned to live with the boycott too. She has developed a thriving merchant marine as much because of as in spite of the boycott. She has found new markets where the logical markets were denied to her.

I am aware that the most powerful American firms have been able to live with boycott pressure. My point is that they should not have to.

I am asking Congress to amend the Export Control Act, under which the Commerce Department can now regu-

late exports in order to further the foreign policy of the United States. I want it unequivocally stated by Congress that it is in fact our foreign policy to oppose and condemn any trade boycott directed against foreign countries with which the United States maintains friendly relations.

In addition to officially declaring our opposition to such trade restraints barring commerce with friendly nations, the provisions of my bill will specifically outlaw the giving of information which could be used to further such boycotts or the signing of actual boycott agreements.

Under the protections of this legislation, any American businessman can then, with impunity, flatly refuse to divulge any information about his commercial investments or dealings with any of our foreign friends, and he can refuse to sign agreements not to trade or deal with those countries.

Several European governments have already taken positive steps to protect their citizens from the boycott. The International Chamber of Commerce adopted a resolution last November counseling chambers of commerce never to certify negative certificates of origin. Let us sound the final note on this growing volume of protest by adopting the legislation I propose. There are some principles which this Nation, as leader of the free world, cannot afford to neglect. And one of those principles is the principle of free trade—trade free from intimidation, trade free from fear, trade free from obstruction by a war which we oppose.

Mr. President, I ask unanimous consent that this bill lie on the table through the close of business on the 9th of February for additional cosponsors.

The VICE PRESIDENT. The bill will be received and appropriately referred; and, without objection, the bill will lie on the desk, as requested by the Senator from New Jersey.

The bill (S. 948) to amend section 2 of the Export Control Act of 1949, introduced by Mr. WILLIAMS of New Jersey (for himself and Mr. JAVITS), was received, read twice by its title, and referred to the Committee on Banking and Currency.

Mr. JAVITS. Mr. President, may I join as cosponsor of the bill at this time? I ask unanimous consent that my name be added as a cosponsor of the bill.

The VICE PRESIDENT. Without objection, it is so ordered.

Mr. JAVITS. Mr. President, one of the most unreasonable acts that the Arab States are permitted to do is to try to intimidate American and other firms from dealing with Israel. It is perfectly ridiculous, but it is very dangerous and serious to world trade and business. I welcome the opportunity to join with the Senator from New Jersey.

PROPOSED STATE TECHNICAL SERVICES ACT OF 1965

Mr. MAGNUSON. Mr. President, at the request of the Secretary of Commerce, I send to the desk for appropriate reference the proposed State Technical Services Act of 1965, together with a let-

ter of transmittal from Secretary Hodges and a statement of purpose and need.

Science and technology today have assumed an importance in our lives that was undreamed of in years past. They are vitally involved in assuring an adequate national defense. They are responsible for the present high levels of physical health enjoyed by so many of our citizens. They are at the heart of our efforts to explore and make use of outer space. They hold the key to unlimited sources of energy for the future. They have produced a miracle of abundance in American agriculture.

But there is one area in which science and technology are sometimes taken for granted, although it is a field that is as important as any of the others I have mentioned. I am referring to the dynamic growth of our industrial economy. A prosperous economy is absolutely dependent upon science and technology, and particularly upon our ability to apply the results of new knowledge to practical purposes. All of our efforts in space, in defense, in atomic energy, in public health, are ultimately based on the ability of the private sector of the economy to produce sufficient tax revenues to support these important national programs.

Fortunately, we have not neglected public support for science and technology. We are truly a scientific and technological giant among nations. The amount of new knowledge coming forth from our research and development laboratories accumulates at an ever-increasing rate. This new knowledge, however, does not automatically find its way into use everywhere it is needed, or everywhere it could be exploited.

Highly trained people are necessary to bridge the gap between what has been discovered in a laboratory and what can be used on a production line. Special mechanisms and institutions are needed to translate the results of science into the language of applied technology. The ability to do this must exist in all parts of the country if the results of science and technology are to bear productive fruit in all sections of the country.

To aid in stimulating and expanding the effectiveness of this vital process throughout the Nation, this new legislation has been proposed by the U.S. Department of Commerce, the Federal agency responsible for fostering the steady growth of the American economy.

The State Technical Services Act is designed to permit the Federal Government to join with State governments, universities, and local communities in putting scientific and technical information, in a useful form, into the hands of private industry in all of the States. If successful, it would lead to increased employment through development of new business, improved processes and products, and new services that flow from the exploitation of technology. Finally, it would help make the products of American manufacturers more competitive in the rapidly expanding world markets.

These objectives would be accomplished by a program of technical services specifically designed to meet the

needs of local business and industry. The technical services would be provided mainly through educational institutions with engineering or business administration programs.

In outlining his plans for the Great Society, President Johnson said that the solution to the problems facing the Nation rest neither on massive programs in Washington nor the strained resources of local authorities. What are necessary are new concepts of cooperation, a creative federalism between the National Capitol and the leaders in local communities.

The Commerce Committee will, of course, want to make certain that the proposed State Technical Services Act embodies the most effective design to achieve its goals. Nevertheless, those goals are fully consistent with the principles which underlie the Great Society and they merit the thoughtful consideration and earnest support of the Congress.

I ask that the text of the bill and the letter of transmittal and the statement of purpose and need may be printed at the close of my remarks.

The VICE PRESIDENT. The bill will be received and appropriately referred; and, without objection, the bill, letter of transmittal, and statement of purpose will be printed in the RECORD.

The bill (S. 949) to promote economic growth by supporting State and regional centers to place the findings of science usefully in the hands of American enterprise, introduced by Mr. MAGNUSON, by request, was received, read twice by its title, referred to the Committee on Commerce, and ordered to be printed in the RECORD, as follows:

S. 949

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

DECLARATION OF PURPOSE

That Congress finds that wider diffusion and more effective application of science and technology in industry are essential to the growth of the economy, to higher levels of employment and to the competitive position of United States products in world markets. The Congress also finds that the benefits of federally financed research, as well as other research, must be placed more effectively in the hands of American business and enterprise. The Congress further finds that the several States through cooperation with universities, communities and industries can contribute significantly to these purposes by providing technical services designed to encourage a more effective application of science and technology to both new and established industries. The Congress, therefore, declares that the purpose of this Act is to provide a national program of incentives and support for the several States individually and in cooperation with each other in their establishing and maintaining State and regional technical service programs designed to achieve these ends.

DEFINITIONS

SEC. 2. For the purposes of this Act—

(a) "Technical services" means activities or programs designed to enable businesses and industries to acquire and use scientific and engineering information more effectively through such means as:

(1) Analyzing problems of regions and industries to determine new opportunities for applying technology.

(2) Preparing and disseminating technical reports, abstracts, computer tapes, microfilm, reviews, and similar scientific or engineering information, including the establishment of State or regional technical information centers for this purpose.

(3) Providing a reference service to identify sources of engineering and other scientific expertise.

(4) Sponsoring industrial workshops, seminars, training programs, extension courses, demonstrations, and field visits designed to encourage the more effective application of scientific and engineering information.

(b) "Designated institution" means the institution or agency in each participating State, which has been designated as administrator of the program for such State under section 3 of this Act.

(c) "Qualified institution" means (1) an institution of higher learning with a program leading to degrees in engineering or business administration which is accredited by a nationally recognized accrediting agency or association to be listed by the United States Commissioner of Education, or such an institution which is listed separately after evaluation by the United States Commissioner of Education pursuant to this subsection; or (2) a State agency or a private, nonprofit institution which meets criteria of competence established by the Secretary of Commerce and published in the Federal Register. For the purpose of this Act, the United States Commissioner of Education shall publish a list of nationally recognized accrediting agencies or associations which he determines to be reliable authority as to the quality of engineering or business education or training offered. When the Commissioner determines that there is no nationally recognized accrediting agency or association qualified to accredit such programs, he shall publish a list of institutions he finds qualified after prior evaluation by an advisory committee, composed of persons he determines to be specially qualified to evaluate the training provided under such programs.

(d) "Participating institution" means each qualified institution in a State, which participates in the administration or execution of the State technical services program as provided by this Act.

(e) "Secretary" means the Secretary of Commerce or the official to whom the Secretary has delegated all or part of the authority in this Act.

(f) "State" means one of the States of the United States, the District of Columbia, the Commonwealth of Puerto Rico, or the Virgin Islands.

PLANS AND PROGRAMS

SEC. 3. Any State which wishes to receive Federal payments under this Act in support of its existing or planned technical services program shall designate, under appropriate State laws and regulations, an institution or agency to administer and coordinate that program and to prepare and submit plans and programs to the Secretary of Commerce for approval under this Act. If the institution or agency designated by each State is not a State university or land grant college entitled to benefits under the Act approved July 2, 1862, or the Act of August 30, 1890, and acts amendatory and supplementary thereto (7 U.S.C. 301-329), the governor or other competent State authority shall furnish the Secretary a written statement of his reasons for designating such other institution or agency.

SEC. 4. The designated institution shall prepare and submit to the Secretary in accordance with such regulations as he may publish—

(a) At the beginning of each five-year period, a five-year plan which may be revised annually and which shall: (1) outline the technological and economic conditions of the State taking into account its region,

its industry and its industrial potential and identify the major regional and industrial problems; (2) identify the general approaches and methods to be used in the solution of these problems and outline the means for measuring the impact of such assistance on the State or regional economy; and (3) explain the methods to be used in administering and coordinating the program.

(b) An annual technical services program which shall: (1) identify specific methods, which may include contracts, for accomplishing particular goals and outline the likely impact of these methods in terms of the five-year plan; (2) contain a detailed budget, together with procedures for adequate fiscal control, fund accounting, and auditing, to assure proper disbursement for funds paid to the State under this Act; and (3) indicate the specific responsibilities assigned to each participating institution in the State.

SEC. 5. The Secretary shall not accept a five-year plan for review and approval under this Act unless the governor of the State or his designee determines and certifies that the plan is consistent with State policies and objectives; and the Secretary shall not accept an annual technical services program for review and approval under this Act unless the designated institution has, as certified thereto by the governor or his designee:

(a) Invited all qualified institutions in the State to submit proposals for providing technical services under the Act.

(b) Coordinated its programs with other States and with other publicly supported activities within the State, as appropriate.

(c) Established adequate rules to insure that no officer or employee of the State, the designated institution or any participating institution, shall receive compensation for technical services for which funds are provided under this Act from sources other than his employer and shall not otherwise maintain any private interest in conflict with his public responsibility.

(d) Determined that matching funds will be available from State or non-Federal sources.

(e) Determined that such technical services program does not provide a service performed as practicably by private technical services, professional consultants or private institutions.

(f) Planned no services specially related to a particular firm or company except insofar as the services are of general concern to the community, State or region.

(g) Provided for making public all reports prepared in the course of furnishing technical services supported under this Act or for making them available at cost to any person on request.

APPROVAL BY SECRETARY OF COMMERCE

SEC. 6. The Secretary shall review each five-year plan and each annual program submitted by the designated institution under Section 4, or by the regional or interstate institution under section 7, and shall approve only those which (1) bear the certification required by the governor or his designee under section 5; (2) comply with regulations and meet criteria that the Secretary shall promulgate and publish in the Federal Register; and (3) otherwise accomplish the purposes of this Act.

REGIONAL OR INTERSTATE PROGRAMS

SEC. 7. Two or more States may cooperate in administering and coordinating their plans and programs supported under this Act, in which event all or part of the sums authorized and payable under section 11 to all of the cooperating States may be paid to the institutions or persons authorized to receive them under the terms of the agreement between the cooperating States. When the cooperative agreement designates a regional or interstate institution to act on behalf of

all of the cooperating States, it shall submit to the Secretary for review and approval under section 6 a regional or interstate five-year plan and annual regional or interstate technical services program which, as nearly as practicable, shall meet the requirements of section 4 and section 5.

SEC. 8. Notwithstanding the provisions of section 11, the Secretary is authorized to increase by 10 per centum the amount which he approves for any regional or interstate technical services program submitted under section 7. Such additional amount may be paid without requiring matching funds from State or non-Federal sources.

SEC. 9. The consent of the Congress is given to any two or more States to enter into agreements or compacts, not in conflict with any law of the United States, for cooperative efforts and mutual assistance in establishing regional or interstate institutions under section 7 for accomplishing the purposes of this Act.

ADVISORY COUNCIL

SEC. 10. Each designated institution and each regional or interstate institution shall establish an advisory council for technical services, the members of which shall represent broad community interests and shall be qualified to evaluate programs submitted under section 4. The advisory council shall review each annual program, evaluate its relation to the purposes of this Act, and report its findings to the designated institution and the governor or his designee. Each report of the advisory council shall be available to the Secretary on request.

ADMINISTRATION AND PAYMENTS

SEC. 11. There is authorized to be appropriated such amounts as may be needed to carry out the purposes set forth in this section.

(a) From these amounts, the Secretary is authorized to make an annual payment to each designated institution, regional or interstate institution, or person authorized to receive payments in support of each approved technical services program. Maximum amounts which may be paid to the States under this subsection shall be fixed in accordance with regulations which the Secretary shall promulgate and publish in the Federal Register from time to time, considering (1) population according to the last decennial census; (2) industrial and economic development and productive efficiency; and (3) technical resources.

(b) The Secretary may reserve an amount equal to not more than 20 percent of the total amount appropriated each year under this section and is authorized to make payments to any designated or participating institution for technical services programs which he determines have special merit or to any qualified institution for additional programs which he determines are necessary to accomplish the purposes of this Act, under criteria and regulations that he shall promulgate and publish in the Federal Register.

(c) An amount equal to not more than 5 percent of the total amount appropriated each year under this section shall be available to the Secretary for the direct expenses of administering this Act.

(d) No amount paid under subsection (a) shall exceed one-half of the cost of the approved annual technical services program of the State, and for each dollar paid under subsections (a) and (b) there shall be available for expenditure on each approved program at least one dollar from State or non-Federal sources: *Provided*, That the Secretary may pay an amount not to exceed \$25,000 a year for each of the first three fiscal years to each designated institution to assist in the preparation of the first five-year plan and the initial annual technical services programs, without regard to any requirement of this section.

(e) At the end of each fiscal year, all remaining amounts which are appropriated for payments to the States under subsection (a) and which have not been obligated for payments to the States at that time, shall be available to the Secretary for payments under subsection (b), until expended.

SEC. 12. The Secretary is authorized and directed to aid the States and regions in carrying out their technical services programs by providing reference services which a State or region may use to obtain scientific, technical and engineering information from sources outside the State or region, for the purposes of this Act. There is authorized to be appropriated each fiscal year such amount as may be necessary to provide the services authorized in this section.

SEC. 13. The Secretary is authorized to establish such policies, standards, criteria and procedures and to prescribe such rules and regulations as he may deem necessary or appropriate for the administration of this Act.

LIMITATIONS

SEC. 14. (a) Nothing contained in this Act shall be construed as authorizing a department, agency, officer, or employee of the United States to exercise any direction, supervision, or control over, or impose any requirements or conditions with respect to the personnel, curriculum, methods of instructions, or administration of any educational institution.

(b) Nothing contained in this Act shall be deemed to affect the functions or responsibilities under law of any other department or agency of the United States.

EVALUATION

SEC. 15. Within five years from the date of the approval of this Act, and prior to the end of each five-year period thereafter, the Secretary shall appoint a public committee, none of the members of which shall have been directly concerned with the preparation of plans, administration of programs or participation in programs under this Act. The committee shall evaluate the significance and impact of the program under this Act and make recommendations concerning the program. A report shall be transmitted to the Secretary within sixty days after the end of each five-year period.

ANNUAL REPORT

SEC. 16. Each designated institution or regional or interstate institution shall make an annual report to the Secretary on or before the first day of September of each year on the work accomplished under the technical services program and the status of current services, together with a detailed statement of the amounts received under any of the provisions of this Act during the preceding fiscal year, and of their disbursement.

TERMINATION

SEC. 17. Whenever the Secretary, after reasonable notice and opportunity for hearing to any institution receiving funds under this Act finds that—

(a) The institution is not complying substantially with the provisions of this Act, with the regulations promulgated by the Secretary or with the approved annual technical services program; or

(b) Any funds paid to the institution under the provisions of this Act have been lost, misapplied, or otherwise diverted from the purposes for which they were paid or furnished—

the Secretary shall notify such institution that no further payments will be made under the provisions of this Act until he is satisfied that there is substantial compliance or the diversion has been corrected or, if compliance or correction is impossible, until such institution repays or arranges for the repayment of Federal funds which have been diverted or improperly expended.

SEC. 18. Upon notice by the Secretary to any institution that no further payments will be made pending substantial compliance correction or repayment under Section 17, any funds which may have been paid to such institution under this Act and which are not expended by the institution on the date of such notice, shall be repaid to the Secretary and be deposited to the account of the appropriations from which they originally were paid.

SHORT TITLE

SEC. 19. This Act may be cited as the State Technical Services Act of 1965.

The letter and statement of purpose presented by Mr. MAGNUSON are as follows:

THE SECRETARY OF COMMERCE,
Washington, D.C., January 15, 1965.

PRESIDENT PRO TEMPORE OF THE SENATE,
U.S. Senate, Washington, D.C.

DEAR MR. PRESIDENT: The President's Economic Report of last year stated:

"The Federal Government should join with private business and our universities in speeding the development and spread of new technology. I have directed the Department of Commerce to explore new ways to accomplish this."

During the past year the Commerce Department in accordance with the President's directive, has completed an intensive study of the relationship between technology and national economic growth. We have had discussions with scientists, industrialists, economists, engineers, educators, and officials of State and local governments, as well as with representatives of other departments and agencies of the Federal Government.

As a nation, we have not been giving sufficient emphasis to effective industrial use of the results of science and technology, particularly in our civilian economy at a time when military expenditures are leveling off. We have vast and increasing resources of technology in the United States. Yet too frequently the knowledge which science and engineering produces is not being applied on the production line and in the plants by those companies and industries that need it most.

As a result I now submit to the Congress a proposal to establish a cooperative program between the States and the Federal Government, to place the findings of science and technology in the hands of American business and enterprise. Its purpose is to speed industrial and economic growth through scientific knowledge. To accomplish this purpose, there is attached a draft bill called the "State Technical Services Act of 1965," with a statement of purpose and need.

Under the proposed legislation the Federal Government would join with universities, State and local governments and industry in supporting programs to make science and engineering information more readily available to industry. The bill would establish procedures under which State plans and programs would be formulated and put into effect with local initiative and responsibility. To qualify for Federal grants, the States would designate institutions responsible for administering and coordinating programs within the States. Regional centers could be established where two or more States wish to join in a cooperative program. Each designated State institution or regional center would submit plans and programs which, after approval by the Secretary, would receive Federal funds under regulations which would be published.

The cost to the Federal Government for this proposed program would be between \$5 and \$10 million for the first year, and the cost when the program is fully operative would be modest. The Federal expenditures combined with State and other local funds

would, in my opinion, return benefits to the country manifold.

The proposed legislation would not only help to increase the strength of those areas which are now economically weak but would stimulate an increase in technical manpower and add to our economic strength by raising the level of technology in industry throughout the country.

Our efforts to improve education and to combat widespread unemployment and poverty critically emphasize the need for a healthy industrial economy. Sustained, healthy growth in established companies and industries and continued development of new companies and new industries will mean greater ability to achieve these other national goals.

While this proposal would be modest in terms of its dollar cost to the Federal Government, I think it can result in a very significant and basic contribution to the economic strength of our Nation.

I strongly recommend that Congress give prompt consideration to this proposal, which is in accord with the President's program.

Sincerely yours,

LUTHER H. HODGES,
Secretary of Commerce.

STATEMENT OF PURPOSE AND NEED, PROPOSED STATE TECHNICAL SERVICES ACT OF 1965

This proposed legislation is in response to President Johnson's direction to the Department of Commerce to explore new ways to speed the development and dissemination of new technology. In his Economic Report of January 1964, the President stated:

"The Federal Government provides major support for the research and development which underlie our striking technological advances. In the past, much of our research and development has been connected with national defense. Now, as military outlays level off we face—a challenge to apply the Nation's growing scientific and engineering resources to new socially profitable uses; an opportunity to accelerate the technological progress of our civilian industries.

"The Federal Government should join with private business and our universities in speeding the development and spread of new technology. I have directed the Department of Commerce to explore new ways to accomplish this."

GENERAL DESCRIPTION

The proposed State Technical Services Act of 1965 would enable the Federal Government to make grants to States in support of programs to achieve more effective commercial use of the findings of science and technology. This would be done through technical services programs, planned locally, designed specifically to place these findings into the hands of local businesses and enterprises.

To qualify for Federal matching funds, a State would designate an institution or agency responsible for preparing and administering technical services programs within the State. A regional institution could be designated where two or more States wish to join in a cooperative program (10 percent more Federal support would be available for regional institutions). State and regional programs would be formulated and put into effect with local or regional initiative and responsibility. All qualified institutions in the State could participate.

NEED FOR THE PROGRAM

A close examination of the modern American economy reveals a number of recurring themes—all of them related in some degree to the importance of having effective mechanisms for introducing the results of science and technology into commercial use. For example:

The competition we face in both domestic and world markets is increasingly based on a high level of technology, not solely on lower labor costs.

The most successful competitors, whether at an international level, industrywide, or among individual companies, are those who have learned to use new technology effectively.

The cost of new technology, in the form of technical manpower and equipment, has been rapidly rising.

Opportunities to participate in benefits of technology have not been equally available in the various regions of the United States.

Substantial expenditures for specialized research and development in support of national defense and space missions have not met the full range of industrial needs for technology.

The vast increase in the Nation's total research and development effort have not eradicated long-term unemployment and economic decline in many parts of the country.

Technology cannot be effectively diffused merely by giving information to a potential user. There must be means for active interchange between those using and those furnishing information.

There are many factors involved in complete solutions to the broad problems outlined above. Common to all of them, however, is the need for institutions and mechanisms at the local level, specifically designed to bridge the gap between the most advanced technology, wherever it exists, and the industrial practices of the local region.

OBJECTIVES

Through this program and with the cooperation of universities, communities, and industries, three objectives will be served: (1) strengthening the Nation's economy by upgrading industries through the utilization of advanced technology, thereby generally expanding the industrial base; (2) increasing employment by facilitating industrial use of technology and the manufacturing of new products which result; and (3) enhancing the competitive position of U.S. products in world markets.

The proposal is based on the premise of strong local support and local initiative. The proposal is designed to stimulate local economic programs, utilizing local specialists and applying local resources with Federal matching support and encouragement. Distinct contributions to the economic vitality of our Nation will be made by those who are closest to the problems which the program is designed to meet.

HOW THE PROGRAM WOULD OPERATE

A State wishing to participate in the program would designate an institution (generally a State university or land-grant college) to administer and coordinate the State's technical services program.

The designated institution would prepare a 5-year plan, outlining the technological and economic situation in the State, the major regional and industrial problems, and the means to be used in assisting in their solution.

The designated institution would also prepare an annual technical services program, covering the objectives for the first year, the budget, and the responsibilities assigned to each qualified institution participating in the program. Up to \$25,000 per year for each of the first 3 years may be paid to the designated institution to assist in preparing the first 5-year plan and the initial annual programs.

An advisory council would be established by the designated institution to evaluate and report on the 5-year plan and the annual technical service program.

The 5-year plan and the annual program would be submitted to the Secretary of Commerce. Federal matching funds would be made available to the designated institution to support those programs found by the Secretary to meet legal requirements and to further the purposes of the act. The maximum

annual payment in support of any State program will be limited by a formula to be established by the Secretary, taking into consideration three criteria: (1) population according to the last census; (2) industrial and economic development and productive efficiency; and (3) technical resources. Supplementary matching grants, totaling up to 20 percent of the amount appropriated each year, may also be made to support programs which the Secretary determines have special merit. These provisions are designed to assure that the program's benefits will be widely diffused throughout the Nation while at the same time reserving sufficient discretion to the Secretary to assure that funds are granted only in support of adequately developed programs which will in fact advance the purposes of the act.

The formula to be established by the Secretary will be based on objective considerations such as the proportion of working population gainfully employed, the ratio of assets of individual establishments to employees, urban population, industrial population, numbers of scientists and engineers, and the physical research facilities used for industrial purposes. The formula will be weighted to provide funds to States and regions where industrial development has lagged behind its potential and where technical resources are weak. The population criteria will be applied in a manner which will permit even the smallest States to participate in a meaningful program.

New plans are required at 5-year intervals, although they are to be revised if necessary. Annual technical services programs must be submitted to the Secretary of Commerce each year in order to qualify for annual matching funds. In administering the program and approving plans, the Secretary would consult with other agencies of the Federal Government as appropriate. An annual report is required at the conclusion of each year.

Once in operation, there is a wide variety of technical services which might be offered by the various institutions participating in the program within a particular State. For example, a technology diffusion program oriented to the needs and problems of a specific industry dominant in one State or region might offer workshops, seminars, and demonstrations in order to bring existing technology to local entrepreneurs for use in plants within the region. A technology dissemination and referral center could offer two types of services: (1) technical reports, abstracts, bibliographies, reviews, microfilm, computer tapes, and the like; and (2) referral to sources of scientific and engineering expertise in the fields of interest to the local industry. Such a center would be in continuous interaction with local business and industry, so that its services will be pertinent to the local economy. These examples by no means exhaust the list of possible technical services that might be offered in any State program. The range of services can be as wide as the range of industrial and technological interests in this country, and, within the bounds of the act, is only limited by the imagination and initiative of the persons who develop the State program.

COST

The cost to the Federal Government of the proposed program is expected to be in the range of \$5 to \$10 million for the first year and such amounts as may be necessary for effective future programs which the States justify to the Secretary of Commerce.

All funds made available to States for technical services, except regional incentives, would be matched at least equally by non-Federal funds. Direct Federal expenditures would be limited to expenditures for administration, to be held to less than 5 percent of the cost of the program, and for reference services to aid the States and regions in collecting and processing technical information for dissemination to industry under the act.

These funds will be an investment in promoting the economic growth and widespread industrial development of the entire Nation.

THE PROFESSIONAL SPORTS BILL

Mr. HART. Mr. President, on behalf of myself and Senators DIRKSEN, DODD, and HRUSKA, I am introducing a bill to clarify the status under the antitrust laws of the professional team sports of baseball, football, basketball, and hockey.

For many years there has been an inconsistency in the application of antitrust law to these professional team sports. In 1922, the Supreme Court held baseball was not in interstate commerce and therefore was exempt from the antitrust laws. This decision was reaffirmed in 1953.

Baseball, then, has enjoyed this exemption while the other sports often were relegated to the limbo of uncertainty as to exactly where they stood under the antitrust laws.

This inconsistency has bothered many—not only members of the sports world, but Members of Congress and the Supreme Court itself.

In 1957, the Court—in deciding the applicability of the antitrust laws to professional football—stated it was limiting the exemption solely to professional baseball as granted by the previous decision. However, it said that if the decision appeared “unrealistic, inconsistent, or illogical, it is sufficient to answer, aside from the distinctions between the businesses, that were we considering the question of baseball for the first time upon a clean slate we would have no doubts. No other business claiming the coverage of those cases has such an adjudication. We, therefore, conclude that the orderly way to eliminate error or discrimination, if any there be, is by legislation and not by court decision.”

The Court passed the ball to Congress to correct any discriminations between the sports.

Mr. President, since 1958 Congress has been attempting to wipe the slate clean on this question and to spell out legislation which would leave no uncertainties. Hearings have been held during four sessions of Congress by the Antitrust and Monopoly Subcommittee.

Certainly, I think it is fair to say that the general feeling in the Congress is that the professional team sports should be treated equally. That is what we are attempting to do with this bill. With its enactment, all four team sports would be put squarely under the antitrust laws. Exemptions would be granted in four areas necessary for the teams' sports operation and in which they are unique from other businesses.

We are of the opinion that the bill if passed would remove the threatening clouds and permit the team sports to operate in the manner which would most benefit the public and the growth of the sports.

Mr. President, I ask unanimous consent that the professional sports bill lie on the desk for 48 hours so others who wish to cosponsor may have the opportunity to do so.

The VICE PRESIDENT. The bill will be received and appropriately referred;

and, without objection, the bill will lie on the desk, as requested by the Senator from Michigan.

The bill (S. 950) to make the antitrust laws and the Federal Trade Commission Act applicable to the organized professional team sports of baseball, football, basketball, and hockey and to limit the applicability of such laws so as to exempt certain aspects of the organized professional team sports of baseball, football, basketball, and hockey, and for other purposes, introduced by Mr. HART (for himself and others Senators), was received, read twice by its title, and referred to the Committee on the Judiciary.

WASATCH FRONT SURVEY

Mr. BENNETT. Mr. President, I send to the desk, for appropriate reference, a bill to provide for a survey of recreation and conservation needs in the national forests along the Wasatch Front area in Utah. The survey would include the area beginning in the mountains north of Brigham City and north of Logan, and extending through the Cache National Forest, the Wasatch National Forest, and the Uinta National Forest to Nephi. Its purpose is to recommend a balanced recreation and conservation program in this heavily populated area of Utah.

NEEDED—INCREASED RECREATION FACILITIES

The survey would determine the potential in the three national forests for increasing facilities for recreation uses of all types, including camping, picnicking, hunting, fishing, hiking, and various other types of outdoor recreation. It would include a study of the need for trailways and recreation ways where the topography is suitable for their construction. Additional roads will open the area to greater public use and enjoyment of the forests.

The high mountain ranges of the Wasatch Front contain some of the most scenic country in the United States, and the area abounds in recreation opportunities. Picnicking, camping, hiking, riding, boating, sightseeing, hunting, and fishing are particularly popular. The abundance and variety of flora and fauna and interestingly exposed geologic features make attractive study materials for amateur as well as professional scientists, artists, and photographers. The broad snowfields of the area, with their varied slopes, are a skier's paradise. Alta and Brighton, two of the best winter sports areas in the United States, were among the first topnotch Alpine ski areas, and just last winter another great ski resort area was opened at Park City. Others include Snow Basin near Ogden, Beaver Mountain near Logan, Timphaven near Provo, Solitude near Brighton, and other smaller but equally important resorts nearby.

Recreation use and public interest in the national forest recreation resources along the Wasatch front are skyrocketing. The Wasatch National Forest, which is geographically situated in the heart of the population center, near Salt Lake City, Ogden and Provo, is third among the national forests in the entire United States in visitor use, while the Cache National Forest ranks among the

first dozen, and it is reasonable to expect that the trend along the entire Wasatch front will be upward in recreation uses and demands of all kinds. But, with the great popularity of the area, recreation facilities are already overtaxed and inadequate to meet the demands on them, and the Forest Service under its present program is unable to meet the increasing needs fully.

The visitor use figures for 1964 have just been compiled by the Forest Service. Estimated recreational visits in 1964 in the Wasatch National Forest were 3,093,000; in the Utah portion of the Cache National Forest, 2,378,000; and in the Uinta National Forest, 1,766,000. Recreational visits to the Wasatch National Forest alone exceeded visits to all of Utah's 2 national parks, 8 national monuments and 2 national recreation areas combined, which for the same period totaled 2,134,400 visitors. Recreational visits to the Cache National Forest, likewise, exceeded the number of those visiting Utah's magnificent parks and monuments. The location of these great national forests near the metropolitan area of Utah makes them easily accessible for urban and suburban residents seeking evening and weekend recreational opportunities. Likewise, large numbers of out-of-State travelers enjoy this popular area.

SCENIC RECREATION WAYS

Much of the area is accessible by good roads, but much, too, remains in an undeveloped state. The intermountain region of the Forest Service, headquartered at Ogden, Utah, early this month submitted to the Utah State Highway Department a list and information on 13 recreation and scenic roads it recommends for construction, 5 of which are along the Wasatch front. The Forest Service notes the great recreation possibilities and scenic values which would be opened to the public by providing adequate roads. My bill specifically provides that these roads be included in the survey it would authorize.

The recreation and scenic routes recommended by the Forest Service are:

Wasatch Front Skyline Recreation Way, Wasatch National Forest, begins at Mill Creek Canyon, climbs to crest of Wasatch Front, descends into American Fork Canyon and joins present highway near Timpanogos National Monument. Total length is estimated at 25 miles.

Willard Mountain Scenic Drive Recreation Way, Cache National Forest, Willard Mountain to North Ogden Canyon; length, 25 miles.

Alpine Scenic Loop Recreation Way, Uinta National Forest, begins at U.S. 189 in Provo Canyon and runs north, then west to traverse American Fork Canyon to junction of Utah Highway 80 and 146; length, 20 miles.

Monte Cristo-Logan Canyon Recreation Way, Cache National Forest, a scenic route near Wasatch Divide, connecting U.S. 89 on north end of Logan Canyon and State Highway 39 in Monte Cristo Township; length, 45 miles.

Mount Logan Scenic Drive Recreation Way, Cache National Forest, a loop drive between Logan Canyon and Providence, Utah; length, 30 miles.

Digest of CONGRESSIONAL PROCEEDINGS

OFFICE OF
BUDGET AND FINANCE

(For information only;
should not be quoted
or cited)

OF INTEREST TO THE DEPARTMENT OF AGRICULTURE

UNITED STATES DEPARTMENT OF AGRICULTURE

Washington, D. C. 20250

Official Business

Postage and Fees Paid

U. S. Department of Agriculture

Issued

June 23, 1965

For actions of

June 22, 1965

89th-1st; No. 112

CONTENTS

Animal disease.....15	Fish and wildlife.....6	Stockpile.....19
Appropriations.....5,8,9	Foreign aid.....20	Strawberries.....23
Area redevelopment.....32	Foreign trade.....10,13,30	Summer lunches.....31
Bartered materials.....19	Legislative program.....8	Surplus commodities.....20
Budget amendments.....19	Nomination.....18	Taxes.....21
Cigarette labeling.....1	Personnel.....26	Trade expansion.....30
Continuing resolution....5	Poverty.....3,8,25	Trade fairs.....13
Cotton.....7,27	Public works.....2,5	Transportation.....11
Disaster relief....7,19,28	Reclamation.....33	Veterans' benefits.....29
Economic development....2	Recreation.....6	Water pollution.....17
Education.....14,24	Research.....12	Water projects.....6
Emergency conservation..19	Salaries.....26	Wheat.....7,28
Export control.....10	Science.....12	Wilderness.....22
Farm labor.....23	Soil conservation	
Feed grains.....4,7	programs.....16	

HIGHLIGHTS. House passed cigarette labeling bill. House committee reported public works and economic development bill. House Rules Committee cleared poverty bill. House committee approved feed grains title of farm bill.

HOUSE

1. CIGARETTE LABELING. Passed with amendment S. 559, to regulate the labeling of cigarettes. House conferees were appointed. pp. 13897-913
2. PUBLIC WORKS; ECONOMIC DEVELOPMENT. The Public Works Committee reported with amendment S. 1648, the proposed Public Works and Economic Development Act of 1965 (H. Rept. 539). p. 13943
3. POVERTY. The Rules Committee reported a resolution for consideration of H. R. 8283, to expand the war on poverty and enhance the effectiveness of programs under the Economic Opportunities Act of 1964. p. 13943

4. FEED GRAINS. The Agriculture Committee "approved the feed grains title, as amended by the subcommittee" on H. R. 7097, the farm bill. pp. D557-8
5. APPROPRIATIONS. Passed with amendment H. R. 9220, the public works appropriation bill, which includes funds for St. Lawrence Seaway Development Corporation, Tennessee Valley Authority, Delaware River Basin Commission, Bureau of Reclamation, etc. pp. 13870-97
Made it in order to consider a continuing resolution any day next week.
p. 13867
6. WATER PROJECTS. Received the conference report on S. 1229, to provide uniform policies with respect to recreation and fish and wildlife benefits and costs of Federal multiple-purpose water resource projects (H. Rept. 538). pp. 13867-70
7. DISASTER RELIEF. Rep. Culver spoke in favor of amending the Agriculture Acts to "take into consideration floods and other natural disasters in reference to the feed grains, cotton, and wheat programs for 1965." p. 13942
8. LEGISLATIVE PROGRAM. The Majority Leader announced that the poverty bill would be taken up following the defense appropriation bill. pp. 13942-3

SENATE

9. D. C. APPROPRIATION BILL. Passed with amendments this bill, H. R. 6453. Conferees were appointed. pp. 13819-20, 13824-38
10. EXPORT CONTROL. The Banking and Currency Committee voted to report (but did not actually report) H. R. 7105, to continue the Export Control Act for 4 years. p. D555
11. TRANSPORTATION. The Commerce Committee voted to report (but did not actually report) S. 1098, to amend the Interstate Commerce Act to insure the adequacy of the national railroad freight car supply (amended); and S. 1727, to provide for strengthening and improving the national transportation system (amended). p. D555
12. RESEARCH. The Commerce Committee voted to report (but did not actually report) S. 949, to promote economic growth by supporting State and regional centers to place the findings of science usefully in the hands of American enterprise (amended). p. D555
13. TRADE FAIRS. The Commerce Committee voted to report (but did not actually report) H. R. 4525, to continue authority to develop American-flag carriers and promote the foreign commerce of the U. S. through the use of mobile trade fairs. p. D555
14. EDUCATION. Sen. Yarborough spoke in support of his bill, S. 9, the GI education bill, and inserted several letters commending the bill. pp. 13816-7
15. ANIMAL DISEASE. Sen. Aiken inserted a USDA release, "Vermont Holds Three National Records in Animal Disease Eradication, USDA Reports." p. 13802
16. SOIL CONSERVATION. Sen. Hill inserted an editorial, "Charging for SCS Service-- A Bad Move." p. 13807

DIGEST of Congressional Proceedings

OF INTEREST TO THE DEPARTMENT OF AGRICULTURE

UNITED STATES DEPARTMENT OF AGRICULTURE
WASHINGTON, D. C. 20250
OFFICIAL BUSINESS

POSTAGE AND FEES PAID
U. S. DEPARTMENT OF AGRICULTURE

OFFICE OF BUDGET AND FINANCE
FOR INFORMATION ONLY;
NOT TO BE QUOTED OR CITED)

Issued July 7, 1965
For actions of July 6, 1965
89th-1st; No. 121

CONTENTS

Aging.....14	Farm credit.....21	Personnel.....34
Agricultural	Farm labor.....29	Poverty.....16,25
appropriations.....1	Foreign aid.....12,23	Public Law 480.....23
Animal research.....18	Foreign trade.....19,33	Research.....5,18
Appropriations.....1,2	Forestry.....9	School lunch.....39
Cigarette labeling....4,20	Freight cars.....15	Surplus food.....7
Congress.....35	Health.....6	Transportation.....15,27
Disaster relief.....13	Housing loans.....8	Tree farms.....30
Economics.....11,17,32	Lobbying.....37	Water pollution.....22
Education.....26	Monopolies.....38	Water utilization.....36
Electrification.....3,24	Patents.....10	Wheat.....28

HIGHLIGHTS: Senate committee reported agricultural appropriation bill. Senate committee reported bill exempting REA coops from FPC jurisdiction. Senate agreed to conference report on cigarette labeling bill. Sen. Smith inserted letters critical of surplus food distribution program.

SENATE

1. AGRICULTURAL APPROPRIATION BILL, 1966. The Appropriations Committee reported with amendments this bill, H. R. 8370 (S. Rept. 423)(p. 14998). Attached to this Digest is the committee report, which includes a statement of committee actions. Sen. Holland submitted amendments intended to be proposed to this bill (p. 15001).
2. LEGISLATIVE BRANCH APPROPRIATION BILL, 1966. The Appropriations Committee reported with amendments this bill, H. R. 8775 (S. Rept. 424). p. 14998
3. ELECTRIFICATION. The Commerce Committee reported with amendment (on July 1) S. 1459, to exempt certain cooperatives engaged in rural electrification from Federal Power Commission jurisdiction (S. Rept. 420). p. 14997
Received from REA reports on the approval of loans to the Northern Michigan Electric Cooperative, Inc., Boyne City, Mich., and to the Wolverine Electric Cooperative, Inc., Big Rapids, Mich. p. 14998

4. CIGARETTE LABELING. Agreed to the conference report on S. 559, the cigarette labeling bill. pp. 15032-4
5. RESEARCH. The Commerce Committee reported with amendment (on July 1) S. 949, to promote the economic growth by supporting State and regional centers to place the findings of science usefully in the hands of American enterprise (S. Rept. 421). p. 14997
6. HEALTH. Debated H. R. 6675, to provide a hospital insurance program for the aged under the Social Security Act with a supplementary health benefits program and an expanded program of medical assistance, to increase benefits under the old-age, survivors, and disability insurance system, etc. pp. 15037-69
7. SURPLUS FOODS. Sen. Smith inserted letters from officials of Freeport, Maine, raising "some very serious questions about the administration of the donated surplus commodities program of the Department of Agriculture." p. 15034
8. HOUSING LOANS. H. R. 7984, the housing and urban development bill, was placed on the Senate calendar. p. 14997
9. FORESTRY. Received from this Department a proposed bill to authorize the Secretary of Agriculture, in exchanges under land exchange authority, to accept and use cash to equalize the value of the Federal lands offered; to Agriculture and Forestry Committee. p. 14998
10. PATENTS. Sen. Long, La., inserted an editorial in support of his position that patent rights to discoveries made as a result of taxpayer-financed research should be held by the Government, rather than by private companies. p. 15010
11. ECONOMICS. Sen. Douglas inserted an article, "U. S. Blueprint of Economic Growth: 1970 Forecast: \$10 Billion Surplus." pp. 15014-5
12. FOREIGN AID. Sen. McGee inserted an article reviewing failures in the Russian foreign aid program. p. 15015

HOUSE

13. DISASTER RELIEF. A subcommittee of the Banking and Currency Committee voted to report to the full committee H. R. 7397, to authorize a study of methods of helping to provide financial assistance to victims of future natural disasters p. D613
14. AGING. Concurred in Senate amendments to H. R. 3708, to help older persons through grants to States for community planning and services and for training, research, etc., through HEW (p. 15072). This bill will now be sent to the President.
15. TRANSPORTATION. Rep. Hicks spoke in support of proposed legislation to insure the adequacy of the national railroad freight car supply. p. 15102
16. POVERTY. Rep. Harsha stated the poverty act "has had the effect of holding out additional hope to poverty-stricken people, but the promises of the benefits that they will reap from this legislation are as empty as last year's bird's nest." pp. 15102-3
17. ECONOMICS. Reps. Thomson, Wisc., and Curtis expressed doubt about the economic prosperity of the Nation and inserted supporting articles. pp. 15103, 15108-11

STATE TECHNICAL SERVICES ACT OF 1965

JULY 1, 1965.—Ordered to be printed

Reported, under authority of the order of the Senate of July 1, 1965

Mr. MAGNUSON, from the Committee on Commerce, submitted the following

R E P O R T

[To accompany S. 949]

The Committee on Commerce, to whom was referred the bill (S. 949) to promote economic growth by supporting State and regional centers to place the findings of science usefully in the hands of American enterprise, having considered the same, report favorably thereon with amendments and recommend that the bill as amended do pass.

PURPOSE OF THE LEGISLATION

S. 949 would authorize a 5-year program of matching grants to the States in a cooperative effort to promote the wider diffusion and more effective application of the findings of science and technology throughout American commerce and industry. The technical services program would draw upon the resources of universities, nonprofit research organizations and State and local agencies, in locally planned and administered technical services designed to place these findings usefully in the hands of local businesses and enterprises.

NEED FOR THE TECHNICAL SERVICES PROGRAM

A close examination of the modern American economy reveals a number of recurring themes—all of them related in some degree to the importance of having effective mechanisms for introducing the results of science and technology into commercial use; for example, the competition we face in both domestic and world markets is increasingly based on a high level of technology, not solely on lower labor costs.

The most successful competitors, whether at an international level, industrywide, or among individual companies, are those who have learned to use new technology effectively.

The cost of new technology, in the form of technical manpower and equipment, has been rapidly rising.

Opportunities to participate in benefits of technology have not been equally available in the various regions of the United States.

Substantial expenditures for specialized research and development in support of national defense and space missions have not met the full range of industrial needs for technology.

The vast increase in the Nation's total research and development effort have not eradicated long-term unemployment and economic decline in many parts of the country.

Technology cannot be effectively diffused merely by giving information to a potential user. There must be means for active interchange between those using and those furnishing information.

There are many factors involved in complete solutions to the broad problems outlined above. Common to all of them, however, is the need for institutions and mechanisms at the local level, specifically designed to bridge the gap between the most advanced technology, wherever it exists, and the industrial practices of the local region.

Through the technical services program and with the cooperation of universities, communities, and industries, three objectives will be served: (1) strengthening the Nation's economy by upgrading industries through the utilization of advanced technology, thereby generally expanding the industrial base; (2) increasing employment by facilitating industrial use of technology and the manufacturing of new products which result; and (3) enhancing the competitive position of U.S. products in world markets.

DESCRIPTION OF THE TECHNICAL SERVICES PROGRAM

A State wishing to participate in the program would designate an agency (generally a State university or land-grant college) to administer and coordinate the State's technical services program.

The designated agency would prepare a 5-year plan, outlining the technological and economic situation in the State, the major regional and industrial problems, and the means to be used in assisting in their solution.

The designated agency would also prepare an annual technical services program, covering the objectives for the first year, the budget, and the responsibilities assigned to each qualified institution participating in the program. Up to \$25,000 per year for each of the first 3 years may be paid to the designated agency to assist in preparing the first 5-year plan and the initial annual programs.

An advisory council would be established by the designated agency to evaluate and report on the 5-year plan and the annual technical service program.

The 5-year plan and the annual program would be submitted to the Secretary of Commerce. Federal matching funds would be made available to the designated agency to support those programs found by the Secretary to meet legal requirements and to further the purposes of the act. The maximum annual payment in support of any State program will be limited by a formula to be established by the Secretary, taking into consideration three criteria: (1) Population according to the last census, (2) industrial and economic development

and productive efficiency, and (3) technical resources. Supplementary matching grants, totaling up to 20 percent of the amount appropriated each year, may also be made to support programs which the Secretary determines have special merit. These provisions are designed to assure that the program's benefits will be widely diffused throughout the Nation while at the same time reserving sufficient discretion to the Secretary to assure that funds are granted only in support of adequately developed programs which will in fact advance the purposes of the act.

The formula to be established by the Secretary will be based on objective considerations such as the proportion of working population gainfully employed, the ratio of assets of individual establishments to employees, urban population, industrial population, the numbers of scientists and engineers, and the physical research facilities used for industrial purposes. The formula will be weighted to provide funds to States and regions where industrial development has lagged behind its potential and where technical resources are weak. The population criteria will be applied in a manner which will permit even the smallest States to participate in a meaningful program.

Secretary of Commerce Connor informed the committee that he estimates that the authorization to the States "will be in the range of \$150,000 for the least populous to not more than \$2 million for the most populous States."

New plans are required at 5-year intervals, although they are to be revised if necessary. Annual technical services programs must be submitted to the Secretary of Commerce each year in order to qualify for annual matching funds. In administering the program and approving plans, the Secretary would consult with other agencies of the Federal Government as appropriate. An annual report from each designated agency is required at the conclusion of each year.

Once in operation, there is a wide variety of technical services which might be offered by the various institutions participating in the program within a particular State. For example, a technology diffusion program oriented to the needs and problems of a specific industry dominant in one State or region might offer workshops, seminars, and demonstrations in order to bring existing technology to local entrepreneurs for use in plants within the region. A technology dissemination and referral center could offer two types of services: (1) Technical reports, abstracts, bibliographies, reviews, microfilm, computer tapes, and the like; and (2) referral to sources of scientific and engineering expertise in the fields of interest to the local industry. Such a center would be in continuous interaction with local business and industry, so that its services will be pertinent to the local economy. These examples by no means exhaust the list of possible technical services that might be offered in any State program. The range of services can be as wide as the range of industrial and technological interests in this country, and, within the bounds of the act, is only limited by the imagination and initiative of the persons who develop the State program.

The proposed legislation would not support scientific research or industrial research, nor would it be concerned with developing proprietary products or processes.

S. 949, as amended, would also prohibit the funding of any service "that is now available or could be made available as practicably by private technical services, professional consultants or private institu-

tions." While the bill would authorize technical services to public facilities such as docks, airports, or power or water systems, it would do so only to the extent that such services are of general concern to the industry and commerce of the community, State or region, and it is not anticipated that such activities will become dominant in the State programs.

COMMITTEE CONSIDERATION

The committee held 3 days of hearings on S. 949 and S. 2083, introduced by Senator Scott which, while basically in agreement with the objectives of S. 949, contained certain alternative provisions.

At the committee hearings, the technical services program received the unanimous endorsement of both public and private witnesses, including representatives of State governments, State universities, land-grant colleges, professional engineers, and profit and nonprofit research organizations. The National Association of Manufacturers subsequently submitted a statement in opposition and the U.S. Chamber of Commerce, in partial opposition.

The following members of the Commerce Committee joined as cosponsors of S. 949, as amended by the committee: Senators Magnusson, Pastore, Monroney, Lausche, Bartlett, Hartke, McGee, Hart, Cannon, Brewster, Neuberger, Bass, Cotton, Scott, Prouty, Pearson, and Dominick.

AMENDMENTS

In addition to several technical amendments, the committee adopted 5 substantive amendments as follows:

(1) Placing a 5-year limit on the program with authorization ceilings of \$10 million the first year; \$20 million, the second; \$30 million, the third; and \$40 million for the fourth and fifth years;

(2) specifying that no technical service program could provide a service "that is now available or could be made available as practicably by private technical services, professional consultants or private institutions";

(3) providing that no services can be planned for "a particular firm or company, public work, or other capital project except insofar as the services are of general concern to the industry and commerce of the community, State or region";

(4) deleting the requirement that if the Governor selects a State institution or agency other than a State university or land-grant college, as the designated agency, the Secretary of Commerce must be furnished a written statement of the reasons for designating such other institution or agency. The committee considered that each Governor should have the maximum freedom to select the appropriate administering agency in developing his State program; and

(5) requiring that the Secretary of Commerce make a complete report on the administration of the act to the President and Congress not later than January 30 of each year.

COST OF THE PROGRAM

The cost to the Federal Government of the proposed program will be not in excess of \$10 million for the first year, \$20 million, the second, \$30 million, the third, and \$40 million the fourth and fifth years.

All funds made available to States for technical services, except regional incentives, would be matched at least equally by non-Federal funds. Direct Federal expenditures would be limited to expenditures for administration, to be held to less than 5 percent of the cost of the program, and for reference services to aid the States and regions in collecting and processing technical information for dissemination to industry under the act.

AGENCY COMMENTS

The letter of transmittal from Secretary of Commerce Hodges and the agency comments follow:

LETTER OF TRANSMITTAL FROM THE SECRETARY OF COMMERCE

THE SECRETARY OF COMMERCE,
Washington, D.C., January 15, 1965.

PRESIDENT PRO TEMPORE OF THE SENATE,
U.S. Senate, Washington, D.C.

DEAR MR. PRESIDENT: The President's Economic Report of last year stated:

"The Federal Government should join with private business and our universities in speeding the development and spread of new technology. I have directed the Department of Commerce to explore new ways to accomplish this."

During the past year the Commerce Department in accordance with the President's directive, has completed an intensive study of the relationship between technology and national economic growth. We have had discussions with scientists, industrialists, economists, engineers, educators, and officials of State and local governments, as well as with representatives of other departments and agencies of the Federal Government.

As a nation, we have not been giving sufficient emphasis to effective industrial use of the results of science and technology, particularly in our civilian economy, at a time when military expenditures are leveling off. We have vast and increasing resources of technology in the United States. Yet, too frequently, the knowledge which science and engineering produces is not being applied on the production line and in the plants by those companies and industries that need it most.

As a result I now submit to the Congress a proposal to establish a cooperative program between the States and the Federal Government to place the findings of science and technology in the hands of American business and enterprise. Its purpose is to speed industrial and economic growth through scientific knowledge. To accomplish this purpose, there is attached a draft bill called the State Technical Services Act of 1965, with a statement of purpose and need.

Under the proposed legislation the Federal Government would join with universities, State and local governments and industry in supporting programs to make science and engineering information more readily available to industry. The bill would establish procedures under which State plans and programs would be formulated and put into effect with local initiative and responsibility. To qualify for Federal grants, the States would designate institutions responsible for administering and coordinating programs within the States. Regional centers could be established where two or more States wish to

join in a cooperative program. Each designated State institution or regional center would submit plans and programs which, after approval by the Secretary, would receive Federal funds under regulations which would be published.

The cost to the Federal Government for this proposed program would be between \$5 and \$10 million for the first year, and the cost when the program is fully operative would be modest. The Federal expenditures combined with State and other local funds would, in my opinion, return benefits to the country manifold.

The proposed legislation would not only help to increase the strength of those areas which are now economically weak but would stimulate an increase in technical manpower and add to our economic strength by raising the level of technology in industry throughout the country.

Our efforts to improve education and to combat widespread unemployment and poverty critically emphasize the need for a healthy industrial economy. Sustained, healthy growth in established companies and industries and continued development of new companies and new industries will mean greater ability to achieve these other national goals.

While this proposal would be modest in terms of its dollar cost to the Federal Government, I think it can result in a very significant and basic contribution to the economic strength of our Nation.

I strongly recommend that Congress give prompt consideration to this proposal, which is in accord with the President's program.

Sincerely yours,

LUTHER H. HODGES,
Secretary of Commerce.

COMPTROLLER GENERAL OF THE UNITED STATES,

Washington, D.C., March 15, 1965.

HON. WARREN G. MAGNUSON,
*Chairman, Committee on Commerce,
U.S. Senate.*

DEAR MR. CHAIRMAN: By letter dated February 4, 1965, you requested our report on S. 949. The stated purpose of this measure is to promote economic growth by supporting State and regional centers to place the findings of science usefully in the hands of American enterprise.

While we have no special information that would assist the committee in its consideration of the merits of S. 949, we offer the following comments on certain aspects of the measure.

Inasmuch as the grants made to the institutions described in the bill would involve the expenditure of appropriated funds it is our understanding that these expenditures would be subject to audit and review by this Office with such reports to the Congress as may be deemed necessary under the provisions of the Budget and Accounting Act, 1921, 31 U.S.C. 53, and the Accounting and Auditing Act of 1950, 31 U.S.C. 67. We note, however, that the bill would not expressly grant the Secretary of Commerce or the Comptroller General the right to examine pertinent books, records, and documents of the institutions and agencies receiving Federal grants under the provisions of the bill. We believe that access to such records is necessary for the adequate administration and audit of a grant program, and we

therefore suggest that the bill be amended by including a section substantially as follows:

"Each recipient of a grant under this act shall keep such records as the Secretary shall prescribe, including records which fully disclose the amount and the disposition of such grant, the total cost of the related approved program, the amount and nature of the cost of the program supplied by other sources, and such other records as will facilitate an effective audit.

"The Secretary and the Comptroller General of the United States or any of their duly authorized representatives shall have access to any books, documents, papers, and records of the recipient that are pertinent to amounts paid under this act."

Section 5(g) of S. 949 would require that all reports prepared in the course of furnishing technical services supported under the bill be made public or be made available at cost to any person on request. It is not clear whether, for the purposes of the bill, the cost of the reports is intended to include only the costs of printing and distribution or the full cost of preparing the reports, including research, administrative, and other costs.

Section 11(c) provides that up to 5 percent of the total amount appropriated each year shall be available for direct expenses of administration. We believe that funds for administrative expenses should be provided by the Congress each year in a specified amount on the basis of the proposed program for such fiscal year.

We have no further comments to make concerning S. 949.

Sincerely yours,

JOSEPH CAMPBELL,
Comptroller General of the United States.

EXECUTIVE OFFICE OF THE PRESIDENT,
OFFICE OF SCIENCE AND TECHNOLOGY,
Washington, March 24, 1965.

Hon. WARREN G. MAGNUSON,
Chairman, Committee on Commerce,
U.S. Senate.

DEAR SENATOR MAGNUSON: In reply to your letter of February 24, requesting comments on S. 949, a bill introduced by Senator Byrd and others to promote economic growth by supporting State and regional technological service centers, I would like to offer the following views.

This bill results from several years of study by agencies of the executive branch, supported by leading scientific and economic consultants from outside the Government, of the problems of stimulating and extending technological innovation in the civilian sector of the economy. It is a modest proposal—fully supported by this administration—that merits the support of the Congress.

To a limited degree, the bill is modeled after the agricultural extension programs that have successfully placed the fruits of agricultural research in the hands of the American farmer with enormous benefits to the Nation. But the measure will also break new ground as a partnership—between the Federal Government, the States, our universities, and industries—to make technological achievements more widely and more readily available to a broad range of industrial firms at a time when industrial products are becoming increasingly sophisticated, when international competition is stiffening, and when public demands for goods and services are constantly increasing.

By authorizing the establishment in every State of university-based centers capable of making available to industry a wide variety of useful technical services, the bill would contribute to two especially important and timely objectives:

First, both industry and the universities would benefit from the resulting interchange of ideas and information. There are throughout the country many enterprises that because of limited resources or physical isolation have failed to become aware or take advantage of the rich store of relevant information and technique that fresh scientific discoveries are constantly increasing, often under Federal sponsorship. On the other hand, our university educational programs could also, to a limited extent, benefit from increased involvement in and commitment to the economic development of their environment. New England and California typify regions of the country where such industry-university interdependence has significantly paced both economic and intellectual progress.

A second merit of the bill is that it would contribute to carrying forward this progress in every State of the Nation. Recent studies in both the executive and legislative branches indicate the desirability of sound programs to stimulate technological development throughout the country. In many States, this program would generate the first organized approach along such lines. Significantly, the program would rest on State-based initiative and cooperative funding, within the context of planning on both a long-range and annual basis. Furthermore, the provision of incentives in section 7 for regional and interstate cooperation is especially sound and responsive to the regional nature of many of our economic needs and opportunities.

S. 949, I believe, would constitute a solid first step in an attempt to stimulate new technology and new job opportunities. Should you desire a further expression of my views on this bill, I would be glad to provide it.

Sincerely,

DONALD F. HORNIG, *Director.*

CHANGES IN EXISTING LAW

There are no changes in existing law.

COSPONSORS ON S. 949

Senators: Magnuson, Scott, Byrd (West Virginia), Ribicoff, Pastore, Monroney, Lausche, Bartlett, Hartke, McGee, Hart, Cannon, Brewster, Neuberger, Bass, Cotton, Prouty, Pearson, Dominick, and McGovern.



Calendar No. 406

89TH CONGRESS
1ST SESSION

S. 949

[Report No. 421]

IN THE SENATE OF THE UNITED STATES

FEBRUARY 2, 1965

Mr. MAGNUSON (for himself, Mr. BYRD of West Virginia, Mr. RIBICOFF, and Mr. McGOVERN) (by request) introduced the following bill; which was read twice and referred to the Committee on Commerce

JULY 1, 1965

Reported, under authority of the order of the Senate of July 1, 1965, by Mr. MAGNUSON, with amendments

[Omit the part struck through and insert the part printed in italic]

A BILL

To promote economic growth by supporting State and regional centers to place the findings of science usefully in the hands of American enterprise.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

3 DECLARATION OF PURPOSE

4 SECTION 1. That Congress finds that wider diffusion and
5 more effective application of science and technology in *busi-*
6 *ness, commerce, and* industry are essential to the growth of
7 the economy, to higher levels of employment, and to the
8 competitive position of United States products in world mar-
9 kets. The Congress also finds that the benefits of federally

1 financed research, as well as other research, must be placed
 2 more effectively in the hands of American ~~business and enter-~~
 3 ~~prise~~ *business, enterprise, commerce, and industrial estab-*
 4 *lishments*. The Congress further finds that the several States
 5 through cooperation with universities, communities, and in-
 6 dustries can contribute significantly to these purposes by pro-
 7 viding technical services designed to encourage a more effec-
 8 tive application of science and technology to both new and
 9 established ~~industries~~ *business, commerce, and industrial*
 10 *establishments*. The Congress, therefore, declares that the
 11 purpose of this Act is to provide a national program of incen-
 12 tives and support for the several States individually and in
 13 cooperation with each other in their establishing and main-
 14 taining State and regional technical service programs de-
 15 signed to achieve these ends.

16 DEFINITIONS

17 SEC. 2. For the purposes of this Act—

18 (a) “Technical services” means activities or programs
 19 designed to enable ~~businesses and industries~~ *businesses, com-*
 20 *merce, and industrial establishments* to acquire and use scien-
 21 tific and engineering information more effectively through
 22 such means as—

23 (1) analyzing problems of regions and industries to
 24 determine new opportunities for applying technology;

25 (2) preparing and disseminating technical reports,

1 abstracts, computer tapes, microfilm, reviews, and similar
2 scientific or engineering information, including the es-
3 tablishment of State or regional technical information
4 centers for this purpose;

5 (3) providing a reference service to identify sources
6 of engineering and other scientific expertise; and

7 (4) sponsoring industrial workshops, seminars,
8 training programs, extension courses, demonstrations, and
9 field visits designed to encourage the more effective appli-
10 cation of scientific and engineering information.

11 (b) “Designated ~~institution~~ *agency*” means the institu-
12 tion or agency in each participating State, which has been
13 designated as administrator of the program for such State
14 under section 3 of this Act.

15 (c) “Qualified institution” means (1) an institution of
16 higher learning with a program leading to degrees in engi-
17 neering or business administration which is accredited by
18 a nationally recognized accrediting agency or association
19 to be listed by the United States Commissioner of Education,
20 or such an institution which is listed separately after evalua-
21 tion by the United States Commissioner of Education pur-
22 suant to this subsection; or (2) a State agency or a private,
23 nonprofit institution which meets criteria of competence
24 established by the Secretary of Commerce and published in
25 the Federal Register. For the purpose of this ~~Act~~, *subsec-*

tion the United States Commissioner of Education shall publish a list of nationally recognized accrediting agencies or associations which he determines to be reliable authority as to the quality of engineering or business education or training offered. When the Commissioner determines that there is no nationally recognized accrediting agency or association qualified to accredit such programs, he shall publish a list of institutions he finds qualified after prior evaluation by an advisory committee, composed of persons he determines to be specially qualified to evaluate the training provided under such programs.

(d) "Participating institution" means each qualified institution in a State, which participates in the administration or execution of the State technical services program as provided by this Act.

(e) "Secretary" means the Secretary of Commerce or the official to whom the Secretary has delegated all or part of the authority in this Act.

(f) "State" means one of the States of the United States, the District of Columbia, the Commonwealth of Puerto Rico, or the Virgin Islands.

PLANS AND PROGRAMS

SEC. 3. ~~Any~~ *The Governor or other competent authority of any State which wishes to receive Federal payments under this Act in support of its existing or planned*

1 technical services program shall designate, under appropriate
2 State laws and regulations, an institution or agency to
3 administer and coordinate that program and to prepare and
4 submit plans and programs to the Secretary of Commerce
5 for approval under this Act. If the institution or agency
6 designated by each State is not a State university or land-
7 grant college entitled to benefits under the Act approved
8 July 2, 1862, or the Act of August 30, 1890, and Acts
9 amendatory and supplementary thereto (7 U.S.C. 301-
10 329), the Governor or other competent State authority shall
11 furnish the Secretary a written statement of his reasons for
12 designating such other institution or agency.

13 SEC. 4. The designated institution agency shall prepare
14 and submit to the Secretary in accordance with such regula-
15 tions as he may publish—

16 (a) At the beginning of each five-year period, a five-year
17 plan which may be revised annually and which shall: (1)
18 outline the technological and economic conditions of the State,
19 taking into account its region, its industry, business, com-
20 merce, and its industrial potential and identify the major
21 regional and industrial problems; (2) identify the general
22 approaches and methods to be used in the solution of these
23 problems and outline the means for measuring the impact of
24 such assistance on the State or regional economy; and (3)

1 explain the methods to be used in administering and coordi-
2 nating the program.

3 (b) An annual technical services program which shall
4 (1) identify specific methods, which may include contracts,
5 for accomplishing particular goals and outline the likely
6 impact of these methods in terms of the five-year plan;
7 (2) contain a detailed budget, together with procedures for
8 adequate fiscal control, fund accounting, and auditing, to
9 assure proper disbursement for funds paid to the State under
10 this Act; and (3) indicate the specific responsibilities
11 assigned to each participating institution in the State.

12 SEC. 5. The Secretary shall not accept a five-year plan
13 for review and approval under this Act unless the Governor
14 of the State or his designee determines and certifies that the
15 plan is consistent with State policies and objectives; and the
16 Secretary shall not accept an annual technical services pro-
17 gram for review and approval under this Act unless the
18 designated ~~institution~~ *agency* has, as certified thereto by the
19 Governor or his designee—

20 (a) invited all qualified institutions in the State
21 to submit proposals for providing technical services
22 under the Act;

23 (b) coordinated its programs with other States and

1 with other publicly supported activities within the State,
2 as appropriate;

3 (c) established adequate rules to insure that no
4 officer or employee of the State, the designated institu-
5 tion agency or any participating institution, shall receive
6 compensation for technical services for which funds are
7 provided under this Act from sources other than his
8 employer and shall not otherwise maintain any private
9 interest in conflict with his public responsibility;

10 (d) determined that matching funds will be avail-
11 able from State or *other* non-Federal sources;

12 (e) determined that such technical services pro-
13 gram does not provide a service ~~performed~~ *that is now*
14 *available or could be made available* as practicably
15 by private technical services, professional consultants, or
16 private institutions;

17 (f) planned no services specially related to a par-
18 ticular firm or company, *public work, or other capital*
19 *project* except insofar as the services are of general con-
20 cern to the *industry and commerce of the* community,
21 State, or region;

22 (g) provided for making public all reports pre-
23 pared in the course of furnishing technical services

1 supported under this Act or for making them available
2 at cost to any person on request.

3 APPROVAL BY SECRETARY OF COMMERCE

4 SEC. 6. The Secretary shall review each five-year plan
5 and each annual program submitted by the designated insti-
6 ~~tution~~ *agency* under section 4, or by the regional or interstate
7 institution under section 7, and shall approve only those
8 which (1) bear the certification required by the Governor
9 or his designee under section 5; (2) comply with regulations
10 and meet criteria that the Secretary shall promulgate and
11 publish in the Federal Register; and (3) otherwise accom-
12 plish the purposes of this Act.

13 REGIONAL OR INTERSTATE PROGRAMS

14 SEC. 7. Two or more States may cooperate in adminis-
15 tering and coordinating their plans and programs supported
16 under this Act, in which event all or part of the sums author-
17 ized and payable under section 11 to all of the cooperating
18 States may be paid to the institutions or persons authorized
19 to receive them under the terms of the agreement between
20 the cooperating States. When the cooperative agreement
21 designates a regional or interstate institution to act on behalf
22 of all of the cooperating States, it shall submit to the Secre-
23 tary for review and approval under section 6 a regional or
24 interstate five-year plan and annual regional or interstate

1 technical services program which, as nearly as practicable,
2 shall meet the requirements of section 4 and section 5.

3 SEC. 8. Notwithstanding the provisions of section 11,
4 the Secretary is authorized to increase by 10 per centum the
5 amount which he approves for any regional or interstate
6 technical services program submitted under section 7. Such
7 additional amount may be paid without requiring matching
8 funds from State or non-Federal sources.

9 ~~SEC. 9~~ SEC. 9. (a) The consent of the Congress is given
10 to any two or more States to enter into agreements or com-
11 pacts, not in conflict with any law of the United States, for
12 cooperative efforts and mutual assistance in establishing
13 regional or interstate institutions under section 7 for accom-
14 plishing the purposes of this Act.

15 (b) *The right to alter, amend, or repeal this section,*
16 *or any consent granted pursuant to this section, is expressly*
17 *reserved.*

18 ADVISORY COUNCIL

19 SEC. 10. Each designated ~~institution~~ agency and each
20 regional or interstate institution shall ~~establish~~ appoint an
21 advisory council for technical services, the members of which
22 shall represent broad community interests and shall be quali-
23 fied to evaluate programs submitted under section 4. The

1 advisory council shall review each annual program, evaluate
2 its relation to the purposes of this Act, and report its findings
3 to the designated ~~institution~~ *agency* and the Governor or his
4 designee. Each report of the advisory council shall be avail-
5 able to the Secretary on request.

6 ADMINISTRATION AND PAYMENTS

7 ~~SEC. 11.~~ There is authorized to be appropriated such
8 amounts as may be needed to carry out the purposes set
9 forth in this section.

10 *SEC. 11. There is authorized to be appropriated for the*
11 *purposes of this Act, \$10,000,000 for the fiscal year ending*
12 *June 30, 1966; \$20,000,000 for the fiscal year ending*
13 *June 30, 1967; \$30,000,000 for the fiscal year ending*
14 *June 30, 1968; \$40,000,000 for the fiscal year ending*
15 *June 30, 1969; and \$40,000,000 for the fiscal year ending*
16 *June 30, 1970.*

17 (a) From these amounts, the Secretary is authorized to
18 make an annual payment to each designated ~~institution,~~
19 *agency*, regional or interstate institution, or person authorized
20 to receive payments in support of each approved technical
21 services program. Maximum amounts which may be paid to
22 the States under this subsection shall be fixed in accordance
23 with regulations which the Secretary shall promulgate and
24 publish in the Federal Register from time to time, consider-
25 ing (1) population according to the last decennial census;

1 (2) *business, ~~commerce~~, commercial*, industrial and eco-
2 nomic development and productive efficiency; and (3)
3 technical resources.

4 (b) The Secretary may reserve an amount equal to not
5 more than 20 per centum of the total amount appropriated
6 each year under this section and is authorized to make pay-
7 ments to any designated *agency* or participating institution
8 for technical services programs which he determines have
9 special merit or to any qualified institution for additional pro-
10 grams which he determines are necessary to accomplish the
11 purposes of this Act, under criteria and regulations that he
12 shall promulgate and publish in the Federal Register.

13 (c) An amount equal to not more than 5 per centum
14 of the total amount appropriated each year under this section
15 shall be available to the Secretary for the direct expenses
16 of administering this Act.

17 (d) No amount paid under subsection (a) shall exceed
18 one-half of the cost of the approved annual technical services
19 program of the State, and for each dollar paid under sub-
20 sections (a) and (b) there shall be available for expendi-
21 ture on each approved program at least \$1 from State or
22 *other non-Federal sources: Provided, That* the Secretary may
23 pay an amount not to exceed \$25,000 a year for each of the
24 first three fiscal years to each designated ~~institution~~ *agency* to
25 assist in the preparation of the first five-year plan and

1 the initial annual technical services programs, without regard
2 to any requirement of this section.

3 (e) At the end of each fiscal year, all remaining
4 amounts which are appropriated for payments to the States
5 under subsection (a) and which have not been obligated
6 for payments to the States at that time, shall be available to
7 the Secretary for payments under subsection (b), until
8 expended.

9 SEC. 12. The Secretary is authorized and directed to
10 aid the States and regions in carrying out their technical
11 services programs by providing reference services which a
12 State or region may use to obtain scientific, technical, and
13 engineering information from sources outside the State or
14 region, for the purposes of this Act. There is authorized
15 to be appropriated each fiscal year such amount as may be
16 necessary to provide the services authorized in this section.

17 SEC. 13. The Secretary is authorized to establish such
18 policies, standards, criteria, and procedures and to prescribe
19 such rules and regulations as he may deem necessary or
20 appropriate for the administration of this Act.

21 LIMITATIONS

22 SEC. 14. (a) Nothing contained in this Act shall be
23 construed as authorizing a department, agency, officer, or
24 employee of the United States to exercise any direction,
25 supervision, or control over, or impose any requirements or

1 conditions with respect to the personnel, curriculum, methods
2 of instructions, or administration of any educational institu-
3 tion.

4 (b) Nothing contained in this Act shall be deemed to
5 affect the functions or responsibilities under law of any other
6 department or agency of the United States.

7 EVALUATION

8 SEC. 15. Within five years from the date of the approval
9 of this Act, and prior to the end of each five-year period
10 thereafter, the Secretary shall appoint a public committee,
11 none of the members of which shall have been directly con-
12 cerned with the preparation of plans, administration of pro-
13 grams or participation in programs under this Act. The
14 Committee shall evaluate the significance and impact of the
15 program under this Act and make recommendations concern-
16 ing the program. A report shall be transmitted to the Sec-
17 retary within sixty days after the end of each five-year
18 period.

19 ANNUAL REPORT

20 ~~SEC. 16.~~ SEC. 16. (a) Each designated institution
21 agency or regional or interstate institution shall make an
22 annual report to the Secretary on or before the first day of
23 September of each year on the work accomplished under
24 the technical services program and the status of current
25 services, together with a detailed statement of the amounts

1 received under any of the provisions of this Act during the
2 preceding fiscal year, and of their disbursement.

3 (b) The Secretary shall make a complete report with
4 respect to the administration of this Act to the President and
5 the Congress not later than January 31 following the end of
6 each fiscal year for which amounts are appropriated pursuant
7 to this Act.

TERMINATION

9 SEC. 17. Whenever the Secretary, after reasonable notice
10 and opportunity for hearing to any *agency or* institution
11 receiving funds under this Act finds that—

(a) the *agency or* institution is not complying substantially with the provisions of this Act, with the regulations promulgated by the Secretary or with the approved annual technical services program; or

(b) any funds paid to the *agency or* institution under the provisions of this Act have been lost, misapplied, or otherwise diverted from the purposes for which they were paid or furnished—

20 the Secretary shall notify such *agency or* institution that no
21 further payments will be made under the provisions of this
22 Act until he is satisfied that there is substantial compliance
23 or the diversion has been corrected or, if compliance or cor-
24 rection is impossible, until such *agency or* institution repays

1 or arranges for the repayment of Federal funds which have
2 been diverted or improperly expended.

3 SEC. 18. Upon notice by the Secretary to any *agency or*
4 institution that no further payments will be made pending
5 substantial compliance correction or repayment under section
6 17, any funds which may have been paid to such *agency or*
7 institution under this Act and which are not expended by the
8 *agency or* institution on the date of such notice, shall be
9 repaid to the Secretary and be deposited to the account of
10 the appropriations from which they originally were paid.

11 SHORT TITLE

12 SEC. 19. This Act may be cited as the "State Technical
13 Services Act of 1965".

Amend the title so as to read: "A bill to promote commerce and encourage economic growth by supporting State and regional centers to place the findings of science usefully in the hands of American enterprise."

[Report No. 421]

A BILL

To promote economic growth by supporting State and regional centers to place the findings of science usefully in the hands of American enterprise.

By Mr. MAGNUSON, Mr. BYRD of West Virginia,
Mr. RUBIOFF, and Mr. MCGOVERN

FEBRUARY 2, 1965

Read twice and referred to the Committee on
Commerce

JULY 1, 1965

Reported with amendments

A BILL

to amend the act of March 3, 1879, relating to the
organization of the Department of the Interior,
and for other purposes.

Enacted at Washington, D. C., on March 3, 1879.

Approved March 3, 1879.

Wm. McKim, Clerk of the House.

DIGEST of Congressional Proceedings

OF INTEREST TO THE DEPARTMENT OF AGRICULTURE

UNITED STATES DEPARTMENT OF AGRICULTURE
WASHINGTON, D. C. 20250
OFFICIAL BUSINESS

POSTAGE AND FEES PAID
U. S. DEPARTMENT OF AGRICULTURE

OFFICE OF BUDGET AND FINANCE
FOR INFORMATION ONLY;
(NOT TO BE QUOTED OR CITED)

Issued July 20, 1965
For actions of July 19, 1965
89th-1st; No. 130

CONTENTS

Appropriations.....12,16,35,39	Flood control.....10,18	Poverty.....24,27
Bread tax.....25	Food.....29	Public Law 480.....21
Claims.....14	Foreign aid.....29	Public works.....10,37
Commodity exchanges.....22	Foreign trade.....33	Reclamation.....4
Conservation.....7	Forestry.....1	Research.....5,13,19
Corn.....21	Health.....6	Saline water.....13
Cotton.....8	Highways.....15	Surplus property.....34
Disaster relief...11,32,38	Housing.....9	Trade expansion.....33
Education.....30,36	Lands.....1	User charges.....7
Farm labor.....20,26	Legislative program....24	Veterans benefits.....2
Farm program.....23,28,40	Loans.....2,3,9	Watersheds.....17,31
Feed grains.....40	Military construction...39	Wheat.....25,40

HIGHLIGHTS: Sen. Harris criticized fees established under Land and Water Conservation Fund. Sen. Kuchel urged increased production of "quality" cotton to compete with synthetics. Rep. Ashbrook criticized alleged "partisan policies" to promote passage of farm bill. Rep. Purcell urged passage of farm bill.

SENATE

1. FORESTRY. The Interior and Insular Affairs Committee reported with amendments S. 1764, to authorize the acquisition of certain lands within the boundaries of the Unita National Forest, Utah (S. Rept. 467). p. 16743
2. VETERANS' BENEFITS. By a vote of 69 to 17, passed as reported S. 9, to give cold war veterans educational and home-loan benefits similar to those of World War II and Korean conflict veterans, including institutional on-farm training and home and farm loan assistance by the Veterans Administration. pp. 16672-4, 16676-7, 16679-82, 16684-724

3. LANDS. The Interior and Insular Affairs Committee voted to report (but did not actually report) S. 625, with amendment, to authorize the sale of certain or disconnected tracts of land, and S. 1190, to provide that certain limitations shall not apply to certain land patented to Alaska for the use of the University of Alaska. p. D665
4. RECLAMATION. The Interior and Insular Affairs Committee voted to report (but did not actually report) S. 34, with amendment, to make certain provisions in connection with construction of the Garrison diversion unit, Missouri River Basin project. p. D665
5. RESEARCH. Passed as reported S. 949, to authorize a 5-year program of matching grants to the States by the Commerce Department in a cooperative effort to promote the wider diffusion and more effective application of the findings of science and technology throughout commerce and industry. pp. 16728-32
6. HEALTH. Conferees were appointed on S. 510, to extend and amend certain expiring provisions of the Public Health Service Act relating to community health services (p. 16672). House conferees have already been appointed.
7. USER CHARGES; CONSERVATION. Sen. Harris criticized user charges established under the Land and Water Conservation Fund, urged enactment of legislation to give Congress veto power over any fees established by Federal agencies, and inserted an Okla. Legislature resolution in support of his position. p. 16645
8. COTTON. Sen. Kuchel urged increased production of "quality" cotton to compete more effectively with synthetics, expressed opposition to payment of price supports "on cotton that is not of sufficiently high quality to be used in our high-speed and efficient modern textile mills," and inserted a letter from the president of the Western Cotton Growers Assoc. in support of his position. p. 16657
9. HOUSING LOANS. Conferees were appointed by both Houses on H. R. 7984, the housing and urban development bill. pp. 16555, 16700
Sen. Byrd, W. Va., inserted an article by Vice President Humphrey reviewing and commending the housing and urban development bill. pp. 16660-1
10. PUBLIC WORKS; FLOOD CONTROL. The Public Works Committee reported an original bill, S. 2300, to authorize the construction, repair, and preservation of certain public works on rivers and harbors for navigation, flood control, and other purposes (S. Rept. 464). p. 16646
11. DISASTER RELIEF. Passed over, at the request of Sen. Inouye, S. 1861, to provide additional assistance for areas suffering a major disaster. p. 16644

HOUSE

12. LEGISLATIVE BRANCH APPROPRIATION BILL, 1966. Conferees were appointed on this bill, H. R. 8775, which includes items for the Government Printing Office and the Library of Congress (pp. 16553-5). Senate conferees have already been appointed.
13. SALINE-WATER; RESEARCH. Conferees were appointed on S. 24, to expand, extend, and accelerate the saline water conversion program conducted by Interior (p. 16555). Senate conferees have already been appointed.

fession. It owes much to the proposals of Senators GAYLORD NELSON and EDWARD KENNEDY for a national teacher corps; to Senators WAYNE MORSE and CLIFFORD CASE and Representatives CARL PERKINS and JOHN BRADEMAS for a program of fellowships for teachers; and to Representative PATSY MINK for a program of Federal grants to teachers for sabbatical leaves.

This bill will deepen the meaning and substance of the already impressive work of the 88th and 89th Congresses in the field of education. I have concluded that it is of sufficient urgency to justify action by this session of the Congress. The problems which face us in education do not grow smaller as time goes by; neither should our determination to attack and solve those problems. I commend to you the Teaching Professions Act of 1965, and hope that you will give it speedy consideration.

Sincerely,

LYNDON B. JOHNSON.

OUTLINE OF PROVISIONS OF THE TEACHING PROFESSIONS ACT OF 1965

The newly proposed "Teaching Professions Act of 1965 would carry out the President's proposals, first announced in his July 2 speech before the National Education Association's Convention in New York City, to establish a program of fellowships for elementary and secondary school personnel and to create a National Teacher Corps.

The legislation would authorize the Commissioner of Education to support fellowship programs carried out by institutions of higher education for recent baccalaureate recipients, for persons in other careers desiring to pursue a career in elementary or secondary education, and for persons in elementary and secondary education desiring to improve their qualifications or to acquire qualifications in a different aspect of elementary and secondary education.

Fellowships would be awarded for up to 2 years of graduate study in approved high-quality graduate programs which give major emphasis to substantive courses and are designed for persons pursuing careers in elementary and secondary education.

In addition to stipends for fellowship holders, a cost-of-education allowance of \$2,500 would be paid to the institution of higher education at which each such fellowship holder is studying.

The Commissioner of Education would also be authorized to pay to institutions of higher education part of the cost of developing or strengthening high quality graduate and undergraduate programs for the training of personnel for elementary and secondary education, for the purpose of obtaining an appropriate geographical distribution of such programs.

The bill would establish in the Office of Education a National Teacher Corps in which experienced teachers and teacher-interns who have a bachelor's degree but who have had no teaching experience would enroll for periods of up to 2 years. Members of the Teacher Corps would, pursuant to arrangements with State educational agencies and, where appropriate, with institutions of higher education designated by the State educational agency, be furnished to local educational agencies in areas having high concentrations of low-income families to participate in programs and projects approved under title II of Public Law 874 (title I of the Elementary and Secondary Education Act of 1965).

Before undertaking their teaching duties, all members of the Teacher Corps would be provided training under arrangements which the Commissioner of Education would enter into through grants or contracts, with institutions of higher education and with State educational agencies. The Commissioner would likewise provide, through grants to or contracts with institutions of higher education and State educational

agencies, in-service teachers training programs for teacher-interns, who would teach on less than a full-time basis in order to have time for training courses under the supervision of an institution of higher education. Such courses would, wherever possible, lead to a graduate degree at the end of the teacher-intern's enrollment in the Teacher Corps.

Teacher-interns joining the Teacher Corps would be assigned in teaching teams which would also include experienced teachers, and the teaching program for teacher-interns would be under the supervision of experienced teachers. Insofar as practicable, such experienced teachers would be teachers who are enrolled in the Teacher Corps.

Arrangements for furnishing Teacher Corps members to local educational agencies must provide that such agency will compensate Teacher Corps members at the rate of pay for a teacher who has similar training and experience and similar teaching duties.

Stipends (including subsistence allowances) would be paid to members of the Teacher Corps by the Commissioner of Education during periods of training when Teacher Corps members are not on assignment with a local educational agency. The Federal Government would pay travel expenses and readjustment allowances before and after Teacher Corps members undertake their duties in the areas where they will be teaching. In addition, the Federal Government could make payments necessary to protect retirement rights, medical insurance, and other employee benefits for experienced teachers who expect to return to the schools where they were employed before joining the corps.

Members of the Teacher Corps could be utilized by local educational agencies to provide educational services in which children enrolled in private elementary and secondary schools can participate, in the manner described in title I of the Elementary and Secondary Education Act of 1965.

The legislation guarantees that members of the Teacher Corps would be under the direct supervision and control of local educational agencies to which they are assigned.

While the bill authorizes the furnishing of teachers and teaching teams in the corps to all local educational agencies with programs for low-income children which State educational agencies approve under title I of the Elementary and Secondary Education Act of 1965, if the demand for the services of such teachers should exceed the number available from the Teacher Corps, the Commissioner of Education would be directed to allocate them among the States (to the extent practicable) in proportion to the number of low-income children in each State which are counted for State-by-State distribution of basic grants under title I of the Elementary and Secondary Education Act.

The appropriations authorization for both programs is limited to \$30 million in this fiscal year (1965-66).

An Advisory Council on Teacher Preparation would be established in the Office of Education to review both the fellowship and Teacher Corps programs, as well as other programs bearing on the improvement of teacher preparation programs in the Nation.

Mr. MORSE. Mr. President, I have asked that the material be spread upon the RECORD in order that all Senators may have the opportunity to review the details outlined in the draft bill so that they may, if they wish, join with me and my distinguished colleagues on the committee in cosponsoring the measure.

I therefore ask unanimous consent that the bill I am introducing lie at the desk until the close of business, Friday,

July 23, to enable Senators who wish to do so to add their names.

Mr. President, I wish again to express my delight that the administration is in support of the basic concepts, both the teaching corps and the fellowship components, which many of us have for some time been advocating. Hearings on the concepts have been held by the Education Subcommittee of the Senate Committee on Labor and Public Welfare on June 11 so that there is a strong body of evidence in our hearings record which can be utilized in the evaluation of the specifics both of the bill being introduced and the amendments to S. 600 which were introduced by Senator NELSON for himself, Mr. KENNEDY, and myself Friday last.

In our executive sessions in this week we can now have before us the thinking of the administration as well as that of the Senatorial cosponsors on the mechanism through which the concepts can operate. I feel sure that none of us is wedded to the language either of this bill or of our previously introduced amendments. Our objective, however, remains now as it was earlier, to do the best job we can in drafting language which can best carry out the purpose and trust of the Teaching Professions Act of 1965. It is my hope that we can incorporate these concepts as a separate title of S. 600.

The PRESIDING OFFICER. Without objection, the bill will be held at the desk, as requested by the Senator from Oregon.

NOMINATION OF DR. ROBERT M. WHITE TO BE ADMINISTRATOR OF ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION

Mr. DODD. Mr. President, I was pleased and proud to learn that President Johnson has nominated Dr. Robert M. White to be the first Administrator of the newly created Environmental Science Services Administration.

Dr. White brings to his new position a wealth of experience in the field of the environmental sciences. As Chief of the Weather Bureau and as president of the Travelers Research Center in Hartford, Conn., he has proven himself to be both an able administrator and an eminent scientist.

The ESSA will serve a real need in consolidating in one service the efforts of the Weather Bureau and the Coast and Geodetic Survey. It will focus attention on the long-overdue acknowledgment of the essential unity of the environmental sciences.

As we make spectacular breakthroughs in our space efforts, there will be very important new developments in our knowledge of the physical world in which we live, the oceans around us, and the space above us. It is good to know that a man of Dr. White's energy and talent will be directing for the benefit of our people the application of this new knowledge.

And so, I salute the President for this very fine nomination and I congratulate Dr. White for this well-deserved recog-

nition of his talent and for his dedication to his science and to his country.

I ask unanimous consent to have printed in the RECORD an excellent article from the New York Times describing Dr. White's distinguished career.

There being no objection, the article was ordered to be printed in the RECORD, as follows:

[From the New York Times, July 13, 1965]
TOP U.S. WEATHERMAN: ROBERT MAYER WHITE

WASHINGTON, July 12—A friend who knew Dr. Robert M. White, the Nation's top weatherman, as a boy in Boston said his most vivid memory is of someone "energetically striding up the street." Dr. White has not slowed down since, even when he wrote a thesis for his doctorate of science at Massachusetts Institute of Technology entitled "Global Energy Balance." A reporter who interviewed him in his Weather Bureau office a few moments ago said:

"He was moving rapidly all the time he was talking."

Now the Weather Bureau was merged today with the Coast and Geodetic Survey and an atmospheric radio laboratory into the new Environmental Science Services Administration—largely a creature of Dr. White's own making.

HAS A QUIET MANNER

Dr. White is 42 years old, a dark-haired, brown-eyed man of medium height with a quiet manner and a quick smile. His most outstanding characteristic, other than giving the impression of perpetual motion, seems to be the ability to make others want to work with him.

He took over the Weather Bureau on October 1, 1963, following a man who had directed it for more than 24 years. Since then he has reorganized the Bureau and conceived and shepherded the plan for the new agency through a governmental process that he once called "far more complex than I had thought."

Like Dr. White's thesis and his approach to the physical sciences that govern the weather, the new agency will be global in its outlook.

He has been quoted as saying that meteorology "is on threshold of a revolution"—largely a technological one made possible by statistical methods, computers and satellites that have revolutionized man's ability to observe the atmosphere.

Dr. White has grown up with this revolution. His early interest in geology shifted to meteorology when he was assigned as a weather observer by the Air Force in 1962.

He received a bachelor of arts degree from Harvard University in geology in 1944, left the service in July, and took a detour into journalism and advertising until 1948.

Then he entered MIT, earning a master of science degree in meteorology in 1949 and his doctorate the next year.

From 1950 until 1959 he studied large-scale circulations of the atmosphere as a civilian scientist for the Air Force's Cambridge Research Center near Boston. It was here that he developed the administrative talents that led a fellow scientist to call him "one of the best administrators in Government."

Dr. White returned to MIT briefly as a research associate in 1959 and then became head of the new Travelers Weather Research Center at Hartford.

The center was established by the Travelers Insurance Co. to find ways to predict and warn of storms and hurricanes.

This interest has carried over into a desire to give the new agency what President Johnson called an ability to develop an adequate warning system for the severe hazards of nature—for hurricanes, tornados, floods, earthquakes and seismic sea waves, which have proved so disastrous to the Nation in recent years.

Dr. White also has a strong interest in weather modification, an old dream that now holds some promise of coming true.

TEN-HOUR-A-DAY MAN

He is a 10-hour-a-day man at the office and sometimes a two briefcase man when he takes work home. He lived in apartments until he moved to a house in Connecticut, but there he discovered a love for flower gardening.

Dr. White is married to the former Mavis Seagle, and they have two children, Richard, 7, and Edwina, 5. They live now in a Maryland suburb of Washington. One of his two brothers is Theodore H. White, the author.

In Dr. White's whirlwind approach, very little time is left for raising gladioluses and dahlias, but he takes every opportunity he can.

"He just goes ahead when he has time," Mrs. White said. "When he gets wet, he gets wet. He doesn't take much notice of the weather."

TENTH ANNIVERSARY OF DISNEYLAND

Mr. MURPHY. Mr. President, I rise in tribute to a great American—and a close personal friend of many Members of this body—who yesterday celebrated the 10th anniversary of an accomplishment which has endeared him to all America and to millions of our friends around the world as well.

That man is Walt Disney—and the accomplishment is Disneyland in my home State of California.

Yesterday brought the total number of visitors to Disneyland to almost 50 million. Kings and queens, 23 presidents, premiers, and other heads of state plus 25 royal princes and princesses have visited Disneyland making it one of the most popular attractions in the history of the world.

It is more than a park—more than a collection of clever amusements created and welded together from the genius of Walt Disney. It is Americana—from Frontier Land, down Main Street and into Fantasy Land and Tomorrow Land.

Regardless of age, visitors are more than entertained at Disneyland. They are awed, educated, and inspired. They learn about history, art, geography, space, and industry.

It is comforting to know that in an age of concern for moral erosion, the popularity and success of Disneyland serves to prove that creativeness, cleanliness, and courtesy still promise overwhelming success.

Walt Disney has also given his great talents to the Government of the United States graciously and effectively in fairs, exhibits, and, of course, in films and television. He has been for many years one of the best known and highly respected and honored Americans of all time. He has been honored by 21 foreign governments.

I know that the distinguished Members of the U.S. Senate join with me in saluting Walt Disney and Disneyland—two great American institutions.

Mr. KUCHEL. Mr. President, I am delighted to join my friend and colleague from California in saluting a unique American genius, Walt Disney, whose magic has delighted the whole world.

My hometown is Anaheim. I was

born there, and I have lived there all my life.

When I say to my friends in the east that I live in Anaheim, and they do not quite understand, I say, "That is where Disneyland is located." Then they do know where my home is.

This is a unique undertaking that Walt Disney has created. Therefore, the 50 million people who have come to see the Disney magic are an indication of many more millions who will come there in the future.

I am glad to join my colleague from California in saluting a wonderful and great man, Walt Disney.

STATE TECHNICAL SERVICES ACT OF 1965

Mr. MANSFIELD. Mr. President, I ask unanimous consent that the Senate proceed to the consideration of Calendar No. 406, S. 949.

The PRESIDING OFFICER. The bill will be stated by title for the information of the Senate.

The LEGISLATIVE CLERK. A bill S. 949 to promote the economic growth by supporting State and regional centers to place the findings of science usefully in the hands of American enterprise.

The PRESIDING OFFICER. Is there objection to the present consideration of the bill?

There being no objection, the Senate proceeded to consider the bill which had been reported from the Committee on Commerce with amendments on page 1, line 5, after the word "in", to insert "business, commerce, and"; on page 2, line 2, after the word "American", to strike out "business and enterprise." and insert "business, enterprise, commerce, and industrial establishments."; in line 9, after the word "established", to insert "business, commerce, and industrial establishments."; in line 19, after the word "enable", to strike out "businesses and industries" and insert "businesses, commerce, and industrial establishments."; on page 3, line 11, after the word "Designated", to strike out "institution" and insert "agency"; in line 25, after the word "this", to strike out "Act," and insert "subsection"; on page 4, line 23, after "Sec. 3.", to strike out "Any" and insert "The Governor or other competent authority of any"; on page 5, line 5, after the word "Act.", to strike out:

If the institution or agency designated by each State is not a State university or land-grant college entitled to benefits under the Act approved July 2, 1862, or the Act of August 30, 1890, and Acts amendatory and supplementary thereto (7 U.S.C. 301, 329), the Governor or other competent State authority shall furnish the Secretary a written statement of his reasons for designating such other institution or agency.

In line 13, after the word "designated", to strike out "institution" and insert "agency"; in line 19, after the word "region", to strike out "its industry," and insert "business, commerce, and"; on page 6, line 18, after the word "designated", to strike out "institution" and insert "agency"; on page 7, line 4, after the word "designated", to strike out "institution" and insert "agency"; in line 11,

after the word "State", to insert "other"; in line 13, after the word "service", to strike out "performed" and insert "that is now available or could be made available"; in line 18, after the word "company", to insert "public work or other capital project"; in line 20, after the word "the", to insert "industry and commerce of the"; on page 8, line 5, after the word "designated", to strike out "institution" and insert "agency"; on page 9, at the beginning of the line, strike out "Sec. 9" and insert "Sec. 9(a)"; after line 14, to insert:

(b) The right to alter, amend, or repeal this section, or any consent granted pursuant to this section, is expressly reserved.

In line 19, after the word "designated", to strike out "institution" and insert "agency"; in line 20, after the word "shall", to strike out "establish" and insert "appoint"; on page 10, line 3, after the word "designated", to strike out "institution" and insert "agency"; after line 6, to strike out:

SEC. 11. There is authorized to be appropriated such amounts as may be needed to carry out the purposes set forth in this section.

And insert in lieu thereof:

SEC. 11. There is authorized to be appropriated for the purposes of this Act, \$10,000,000 for the fiscal year ending June 30, 1966; \$20,000,000 for the fiscal year ending June 30, 1967; \$30,000,000 for the fiscal year ending June 30, 1968; \$40,000,000 for the fiscal year ending June 30, 1969; and \$40,000,000 for the fiscal year ending June 30, 1970.

In line 18, after the word "designated", to strike out "institution" and insert "agency"; on page 11, line 1, after "(2)", to strike out "commerce," and insert "commercial,"; in line 7, after the word "designated", to insert "agency"; in line 24, after the word "designated", to strike out "institution" and insert "agency"; on page 12, line 14, after the word "Act.", to strike out:

There is authorized to be appropriated each fiscal year such amount as may be necessary to provide the services authorized in this section.

On page 13, at the beginning of line 20, to strike out "SEC. 16." and insert "SEC. 16(a)", and in the same line, after the word "designated", to strike out "institution" and insert "agency"; on page 14, after line 2, to insert:

(b) The Secretary shall make a complete report with respect to the administration of this Act to the President and the Congress not later than January 31 following the end of each fiscal year for which amounts are appropriated pursuant to this Act.

In line 10, after the word "any", to insert "agency or"; in line 12, after the word "the", to insert "agency or"; in line 16, after the word "the", to insert "agency or"; in line 20, after the word "such", to insert "agency or"; in line 24, after the word "such", to insert "agency or"; on page 15, line 3, after the word "any", to insert "agency or"; in line 6, after the word "such", to insert "agency or"; at the beginning of line 8, to insert "agency or"; and to amend the title so as to read: "A bill to promote commerce and encourage economic

growth by supporting State and regional centers to place the findings of science usefully in the hands of American enterprise."

So as to make the bill read:

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

DECLARATION OF PURPOSE

SECTION 1. That Congress finds that wider diffusion and more effective application of science and technology in business, commerce, and industry are essential to the growth of the economy, to higher levels of employment, and to the competitive position of United States products in world markets. The Congress also finds that the benefits of federally financed research, as well as other research, must be placed more effectively in the hands of American business, enterprise, commerce, and industrial establishments. The Congress further finds that the several States through cooperation with universities, communities, and industries can contribute significantly to these purposes by providing technical services designed to encourage a more effective application of science and technology to both new and established business, commerce, and industrial establishments. The Congress, therefore, declares that the purpose of this Act is to provide a national program of incentives and support for the several States individually and in cooperation with each other in their establishing and maintaining State and regional technical service programs designed to achieve these ends.

DEFINITIONS

SEC. 2. For the purposes of this Act—

(a) "Technical services" means activities or programs designed to enable businesses, commerce, and industrial establishments to acquire and use scientific and engineering information more effectively through such means as—

(1) analyzing problems of the regions and industries to determine new opportunities for applying technology;

(2) preparing and disseminating technical reports, abstracts, computer tapes, microfilm, reviews, and similar scientific or engineering information, including the establishment of State or regional technical information centers for this purpose;

(3) providing a reference service to identify sources of engineering and other scientific expertise; and

(4) sponsoring industrial workshop, seminars, training programs, extension courses, demonstrations, and field visits designed to encourage the more effective application of scientific and engineering information.

(b) "Designated agency" means the institution or agency in each participating State, which has been designated as administrator of the program for such State under section 3 of this Act.

(c) "Qualified institution" means (1) an institution of higher learning with a program leading to degrees in engineering or business administration which is accredited by a nationally recognized accrediting agency or association to be listed by the United States Commissioner of Education, or such an institution which is listed separately after evaluation by the United States Commissioner of Education pursuant to this subsection; or (2) a State agency or a private, nonprofit institution which meets criteria of competence established by the Secretary of Commerce and published in the Federal Register. For the purpose of this subsection the United States Commissioner of Education shall publish a list of nationally recognized accrediting agencies or associations which he determines to be reliable authority as to the quality of engineering or business education or training offered. When the Commissioner

determines that there is no nationally recognized accrediting agency or association qualified to accredit such programs, he shall publish a list of institutions he finds qualified after prior evaluation by an advisory committee, composed of persons he determines to be specially qualified to evaluate the training provided under such programs.

(d) "Participating institution" means each qualified institution in a State, which participates in the administration or execution of the State technical services program as provided by this Act.

(e) "Secretary" means the Secretary of Commerce or the official to whom the Secretary has delegated all or part of the authority in this Act.

(f) "State" means one of the States of the United States, the District of Columbia, the Commonwealth of Puerto Rico, or the Virgin Islands.

PLANS AND PROGRAMS

SEC. 3. The Governor or other competent authority of any State which wishes to receive Federal payments under this Act in support of its existing or planned technical services program shall designate, under appropriate State laws and regulations, an institution or agency to administer and coordinate that program and to prepare and submit plans and programs to the Secretary of Commerce for approval under this Act.

SEC. 4. The designated agency shall prepare and submit to the Secretary in accordance with such regulations as he may publish—

(a) At the beginning of each five-year period, a five-year plan which may be revised annually and which shall: (1) outline the technological and economic conditions of the State, taking into account its region, business, commerce, and its industrial potential and identify the major regional and industrial problems; (2) identify the general approaches and methods to be used in the solution of these problems and outline the means for measuring the impact of such assistance on the State or regional economy; and (3) explain the methods to be used in administering and coordinating the program.

(b) An annual technical services program which shall (1) identify specific methods, which may include contracts, for accomplishing particular goals and outline the likely impact of these methods in terms of the five-year plan; (2) contain a detailed budget, together with procedures for adequate fiscal control, fund accounting, and auditing, to assure proper disbursement for funds paid to the State under this Act; and (3) indicate the specific responsibilities assigned to each participating institution in the State.

SEC. 5. The Secretary shall not accept a five-year plan for review and approval under this Act unless the Governor of the State or his designee determines and certifies that the plan is consistent with State policies and objectives; and the Secretary shall not accept an annual technical services program for review and approval under this Act unless the designated agency has, as certified thereto by the Governor or his designee—

(a) invited all qualified institutions in the State to submit proposals for providing technical services under the Act;

(b) coordinated its programs with other States and with other publicly supported activities within the State, as appropriate;

(c) established adequate rules to insure with no officer or employee of the State, the designated agency or any participating institution, shall receive compensation for technical services for which funds are provided under this Act from sources other than his employer and shall not otherwise maintain any private interest in conflict with his public responsibility;

(d) determined that matching funds will be available from State or other non-Federal sources;

(e) determined that such technical services program does not provide a service that is now available or could be made available as practicably by private technical services, professional consultants, or private institutions;

(f) planned no services specially related to a particular firm or company, public work, or other capital project except insofar as the services are of general concern to the industry and commerce of the community, State, or region;

(g) provided for making public all reports prepared in the course of furnishing technical services supported under this Act or for making them available at cost to any person on request.

APPROVAL BY SECRETARY OF COMMERCE

SEC. 6. The Secretary shall review each five-year plan and each annual program submitted by the designated agency under section 4, or by the regional or interstate institution under section 7, and shall approve only those which (1) bear the certification required by the Governor or his designee under section 5; (2) comply with regulations and meet criteria that the Secretary shall promulgate and publish in the Federal Register; and (3) otherwise accomplish the purposes of this Act.

REGIONAL OR INTERSTATE PROGRAMS

SEC. 7. Two or more States may cooperate in administering and coordinating their plans and programs supported under this Act, in which event all or part of the sums authorized and payable under section 11 to all of the cooperating States may be paid to the institutions or persons authorized to receive them under the terms of the agreement between the cooperating States. When the cooperative agreement designates as regional or interstate institution to act on behalf of all of the cooperating States, it shall submit to the Secretary for review and approval under section 6 a regional or interstate five-year plan and annual regional or interstate technical services program which, as nearly as practicable, shall meet the requirements of section 4 and section 5.

SEC. 8. Notwithstanding the provisions of section 11, the Secretary is authorized to increase by 10 per centum the amount which he approves for any regional or interstate technical services program submitted under section 7. Such additional amount may be paid without requiring matching funds from State or non-Federal sources.

SEC. 9. (a) The consent of the Congress is given to any two or more States to enter into agreements or compacts, not in conflict with any law of the United States, for cooperative efforts and mutual assistance in establishing regional or interstate institutions under section 7 for accomplishing the purposes of this Act.

(b) The right to alter, amend, or repeal this section, or any consent granted pursuant to this section, is expressly reserved.

ADVISORY COUNCIL

SEC. 10. Each designated agency and each regional or interstate institution shall appoint an advisory council for technical services, the members of which shall represent broad community interests and shall be qualified to evaluate programs submitted under section 4. The advisory council shall review each annual program, evaluate its relation to the purposes of this Act, and report its findings to the designated agency and the Governor or his designee. Each report of the advisory council shall be available to the Secretary on request.

ADMINISTRATION AND PAYMENTS

SEC. 11. There is authorized to be appropriated for the purposes of this Act, \$10,000,000 for the fiscal year ending June 30, 1966; \$20,000,000 for the fiscal year ending June 30, 1967; \$30,000,000 for the fiscal year ending June 30, 1968; \$40,000,000 for the fiscal year ending June 30, 1969; and \$40,-

000,000 for the fiscal year ending June 30, 1970.

(a) From these amounts, the Secretary is authorized to make an annual payment to each designated agency, regional or interstate institution, or person authorized to receive payments in support of each approved technical services program. Maximum amounts which may be paid to the States under this subsection shall be fixed in accordance with regulations which the Secretary shall promulgate and publish in the Federal Register from time to time, considering (1) population according to the last decennial census; (2) business, commercial, industrial and economic development and productive efficiency; and (3) technical resources.

(b) The Secretary may reserve an amount equal to not more than 20 per centum of the total amount appropriated each year under this section and is authorized to make payments to any designated agency or participating institution for technical services programs which he determines have special merit or to any qualified institution for additional programs which he determines are necessary to accomplish the purposes of this Act, under criteria and regulations that he shall promulgate and publish in the Federal Register.

(c) An amount equal to not more than 5 per centum of the total amount appropriated each year under this section shall be available to the Secretary for the direct expenses of administering this Act.

(d) No amount paid under subsection (a) shall exceed one-half of the cost of the approved annual technical services program of the State, and for each dollar paid under subsections (a) and (b) there shall be available for expenditure on each approved program at least \$1 from State or other non-Federal sources: *Provided*, That the Secretary may pay an amount not to exceed \$25,000 a year for each of the first three fiscal years to each designated agency to assist in the preparation of the first five-year plan and the initial annual technical services programs, without regard to any requirement of this section.

(e) At the end of each fiscal year, all remaining amounts which are appropriated for payments to the States under subsection (a) and which have not been obligated for payments to the States at that time, shall be available to the Secretary for payments under subsection (b), until expended.

SEC. 12. The Secretary is authorized and directed to aid the States and regions in carrying out their technical services programs by providing reference services which a State or region may use to obtain scientific, technical, and engineering information from sources outside the State or region, for the purposes of this Act.

SEC. 13. The Secretary is authorized to establish such policies, standards, criteria, and procedures and to prescribe such rules and regulations as he may deem necessary or appropriate for the administration of this Act.

LIMITATIONS

SEC. 14. (a) Nothing contained in this Act shall be construed as authorizing a department, agency, officer, or employee of the United States to exercise any direction, supervision, or control over, or impose any requirements or conditions with respect to the personnel, curriculum, methods of instructions, or administration of any educational institution.

(b) Nothing contained in this Act shall be deemed to affect the functions or responsibilities under law of any other department or agency of the United States.

EVALUATION

SEC. 15. Within five years from the date of the approval of this Act, and prior to the end of each five-year period thereafter, the Sec-

retary shall appoint a public committee, none of the members of which shall have been directly concerned with the preparation of plans, administration of programs or participation in programs under this Act. The Committee shall evaluate the significance and impact of the program under this Act and make recommendations concerning the program. A report shall be transmitted to the Secretary within sixty days after the end of each five-year period.

ANNUAL REPORT

SEC. 16. (a) Each designated agency or regional or interstate institution shall make an annual report to the Secretary on or before the first day of September of each year on the work accomplished under the technical services program and the status of current services, together with a detailed statement of the amounts received under any of the provision of this Act during the preceding fiscal year, and of their disbursement.

(b) The Secretary shall make a complete report with respect to the administration of this Act to the President and the Congress not later than January 31 following the end of each fiscal year for which amounts are appropriated pursuant to this Act.

TERMINATION

SEC. 17. Whenever the Secretary, after reasonable notice and opportunity for hearing to any agency or institution receiving funds under this Act finds that—

(a) the agency or institution is not complying substantially with the provisions of this Act, with the regulations promulgated by the Secretary or with the approved annual technical services program; or

(b) any funds paid to the agency or institution under the provisions of this Act have been lost, misapplied, or otherwise diverted from the purposes for which they were paid or furnished—

the Secretary shall notify such agency or institution that no further payments will be made under the provisions of this Act until he is satisfied that there is substantial compliance or the diversion has been corrected or, if compliance or correction is impossible, until such agency or institution repays or arranges for the repayment of Federal funds which have been diverted or improperly expended.

SEC. 18. Upon notice by the Secretary to any agency or institution that no further payments will be made pending substantial compliance correction or repayment under section 17, any funds which may have been paid to such agency or institution under this Act and which are not expended by the agency or institution on the date of such notice, shall be repaid to the Secretary and be deposited to the account of the appropriations from which they originally were paid.

SHORT TITLE

SEC. 19. This Act may be cited as the "State Technical Services Act of 1965".

Amend the title so as to read: "A bill to promote commerce and encourage economic growth by supporting State and regional centers to place the findings of science usefully in the hands of American enterprise."

Mr. MAGNUSON. On February 2 I had the privilege of introducing S. 949, the proposed State Technical Services Act of 1965, at the request of the Secretary of Commerce. Its purpose is to authorize Federal grants to States in a cooperative program to spread the findings of science and technology throughout American business, commerce, and industry. Its objective is to use all of our scientific and technical knowledge to enhance the economy of the Nation as a whole.

This bill and S. 2083, a similar measure introduced by Senator SCOTT, were considered at length in hearings before the Committee on Commerce to which they were referred. The Senator from Oregon [Mrs. NEUBERGER] graciously chaired the hearings and developed a record of unqualified support for this very vital program for using science for economic growth.

The Commerce Committee has unanimously reported S. 949 to the floor with amendments and, together with Senators RIBICOFF, BYRD of West Virginia, McGOVERN, and DOUGLAS, 16 members of the Commerce Committee have added their names as cosponsors of the bill as reported.

So I take great satisfaction and pride in supporting this bill which uniquely treats the results of science as a national resource, to be diffused more efficiently by State and regional action. We all know of the imbalances that exist today in scientific activity throughout the United States—among industries and among firms within industries. We must remember that of the \$15 billion or so of annual Federal research and development product, a relatively small portion finds its way to stimulate the civilian sector of the economy.

I do not mean to suggest that scientific advances paid for by peace, defense, and atomic research cannot be converted to civilian industrial uses. What I do suggest is that no national effort has been marshaled to take the results of this federally financed research and development, as well as other significant scientific findings, and put them to use effectively by those who comprehend local needs: by the local businesses, by the industries of States and regions, by local chambers of commerce, by labor, by the universities, and by responsible State and local officials.

The bill before us today is the first measure of its kind aimed at putting the responsibility for using the results of science and technology directly upon those who will most directly benefit from it. While the Federal Government will give grants under prescribed conditions, the entire planning and program activities will be carried out by the States through the responsible State agencies and institutions of the State.

It will work along the following lines. The Governor of each State will designate an agency to draw up plans and administer the program for the State. The designated agency will draw up long-term economic and technical plans for the State to identify the State's potential for using science and technology to enhance the industry and commerce of the State. Yearly technical services programs will be prepared with the assistance of all qualified institutions in the State—which are mainly universities, but may also be competent nonprofit organizations. The plans and programs are submitted to the Secretary of Commerce under criteria set forth in the bill. The Secretary, upon approval, may grant up to one-half of the amount of the yearly program. The remainder can come from State or other non-Federal sources. Each State will be authorized under reg-

ulations set by the Secretary of Commerce to receive up to a maximum amount each year. The Secretary of Commerce has stated that the largest amount authorized for a single State would be no more than \$2 million and the smallest amount allocated to a State would be no less than \$150,000.

The Department of Commerce will make annual reports to the Congress. There will be a 5-year review by a public committee.

The committee amendment limits the authorization for appropriations to a 5-year period. The total amount authorized for the 5-year period will be \$140 million, beginning with \$10 million for fiscal year 1966 and increasing to \$40 million by 1969 and 1970. After fiscal year 1970, further authorization will be required by the Congress.

I think this legislation is farsighted, creative and will be recognized by future generations as a dynamic model of what President Johnson has called creative federalism. It places responsibility where the exercise of responsibility will produce the surest return for the Nation as a whole. It will diffuse the vast reservoir of technology that is accumulating in this country throughout the whole of the country.

Mr. President, I am proud that this bill has strong bipartisan support by members of my committee. Such support demonstrates that our free institutions and Government can take far-reaching and sophisticated steps toward applying science and technology to our economic problems for the betterment of mankind without impairing individual creativity and initiative. This bill now before you is long overdue. I am confident that it will be enacted promptly so that its benefits may begin throughout the country without delay.

I ask unanimous consent that that portion of the committee report which explains the purpose, need, and description of the technical services program be printed at the close of my remarks.

There being no objection, the excerpts from the report were ordered to be printed in the RECORD, as follows:

S. 949

PURPOSE OF THE LEGISLATION

S. 949 would authorize a 5-year program of matching grants to the States in a cooperative effort to promote the wider diffusion and more effective application of the findings of science and technology throughout American commerce and industry. The technical services program would draw upon the resources of universities, nonprofit research organizations and State and local agencies, in locally planned and administered technical services designed to place these findings usefully in the hands of local businesses and enterprises.

NEED FOR THE TECHNICAL SERVICES PROGRAM

A close examination of the modern American economy reveals a number of recurring themes—all of them related in some degree to the importance of having effective mechanisms for introducing the results of science and technology into commercial use; for example, the competition we face in both domestic and world markets is increasingly based on a high level of technology, not solely on lower labor costs.

The most successful competitors, whether at an international level, industrywide, or

among individual companies, are those who have learned to use new technology effectively.

The cost of new technology, in the form of technical manpower and equipment, has been rapidly rising.

Opportunities to participate in benefits of technology have not been equally available in the various regions of the United States.

Substantial expenditures for specialized research and development in support of national defense and space missions have not met the full range of industrial needs for technology.

The vast increase in the Nation's total research and development effort have not eradicated long-term unemployment and economic decline in many parts of the country.

Technology cannot be effectively diffused merely by giving information to a potential user. There must be means for active interchange between those using and those furnishing information.

There are many factors involved in complete solutions to the broad problems outlined above. Common to all of them, however, is the need for institutions and mechanisms at the local level, specifically designed to bridge the gap between the most advanced technology, wherever it exists, and the industrial practices of the local region.

Through the technical services program and with the cooperation of universities, communities, and industries, three objectives will be served: (1) strengthening the Nation's economy by upgrading industries through the utilization of advanced technology, thereby generally expanding the industrial base; (2) increasing employment by facilitating industrial use of technology and the manufacturing of new products which result; and (3) enhancing the competitive position of U.S. products in world markets.

DESCRIPTION OF THE TECHNICAL SERVICES PROGRAM

A State wishing to participate in the program would designate an agency (generally a State university or land-grant college) to administer and coordinate the State's technical services program.

The designated agency would prepare a 5-year plan, outlining the technological and economic situation in the State, the major regional and industrial problems, and the means to be used in assisting in their solution.

The designated agency would also prepare an annual technical services program, covering the objectives for the first year, the budget, and the responsibilities assigned to each qualified institution participating in the program. Up to \$25,000 per year for each of the first 3 years may be paid to the designated agency to assist in preparing the first 5-year plan and the initial annual programs.

An advisory council would be established by the designated agency to evaluate and report on the 5-year plan and the annual technical service program.

The 5-year plan and the annual program would be submitted to the Secretary of Commerce. Federal matching funds would be made available to the designated agency to support those programs found by the Secretary to meet legal requirements and to further the purposes of the act. The maximum annual payment in support of any State program will be limited by a formula to be established by the Secretary, taking into consideration these criteria: (1) Population according to the last census, (2) industrial and economic development.

All funds made available to States for technical services, except regional incentives, would be matched at least equally by non-Federal funds. Direct Federal expenditures would be limited to expenditures for administration, to be held to less than 5 percent

of the cost of the program, and for reference services to aid the States and regions in collecting and processing technical information for dissemination to industry under the act.

Mr. MAGNUSON. Mr. President, the distinguished Senator from Pennsylvania [Mr. SCOTT], the able Senator from Oregon [Mrs. NEUBERGER], and I have long worked on this subject. We are very pleased now to be privileged to bring it before the Senate, and to urge its passage.

Mr. SCOTT. Mr. President, the Senate Commerce Committee today voted unanimously to report the proposed State Technical Services Act of 1965, S. 949, to the Senate, Senator WARREN G. MAGNUSON, chairman, announced today.

The bill, as reported, combines the provisions of S. 949, introduced by Senator MAGNUSON, and S. 2083, introduced by Senator SCOTT. It would authorize \$140 million of matching Federal grants to the States over a 5-year period in a cooperative program to spread the findings of science and technology throughout American business and industry.

The technical services program was strongly supported during the 3 days of committee hearings by a wide range of public and private witnesses, including representatives of State governments, State universities, land-grant colleges, professional engineers, and profit and nonprofit research organizations.

As the committee completed final action on the bill, several committee members added their names as sponsors to the bill. In addition to Senators MAGNUSON and SCOTT, these include Senators PASTORE, LAUSCHE, BARTLETT, McGEE, HART, CANNON, and DOMINICK.

Mr. President, I appreciate this opportunity to express my support of legislation to enable the Federal Government to join the States in close partnership with universities and other educational institutions to establish technical services programs designed to put into the hands of local business and industry the latest and most useful findings of science and technology. The purpose of this program is to promote industrial modernization and economic growth and thereby to improve the competitive position of American business and industry in world markets. It can result in the development of new products, an indispensable ingredient for spurring the expansion of a company's sales. It can develop new technologies to aid in the revival of declining industries.

The program to be established by this legislation would be a great help to the industrial complex of Pennsylvania. Surveys could be made to determine what the needs are for particular types or groups of industries. Then, the participating educational institutions in my Commonwealth could set up appropriate technical services programs, either through specialists or by the normal educational processes for those persons in industries who could benefit from this work.

Under the enlightened leadership of Governor SCRANTON, the Commonwealth of Pennsylvania, through such organiza-

tions as the Governor's Council of Business and Industry, the Committee of 100,000 and the Governor's Council on Science and Technology, has developed a mutually beneficial liaison between Government, industry, and the academy to spur Pennsylvania's industrial expansion and economic growth. A technical services program can improve this growing relationship.

Although, for these reasons, I strongly favor this legislation, I feel that the administration bill, S. 949, can be improved in three major respects. I have, therefore, introduced for the committee's consideration my own bill, S. 2083, embodying the changes I propose.

First, section 3 of S. 949 unnecessarily ties a State's hands in designating an agency to administer its technical services program. It requires the Governor to explain his designation if that agency is not a State university or land-grant college. I understand that several States have indicated their desire to designate a Government agency, such as Department of Commerce, to administer the program because of the agency's intimate involvement in administering programs to develop the State's industrial climate and to improve its economy. If this is their desire, they should have that option. Designating a Government agency to administer a State's technical services program would in no way downgrade the important role to be played by the educational institutions. Indeed, under my bill as well as S. 949, the designated agency is required to consult all qualified institutions in the State in formulating its 5-year plan and its annual technical services program. They will thus have a voice in developing the program. I feel strongly, therefore, that the State should have more discretion in deciding who is to administer the program.

Second, States should have the opportunity to utilize an existing agency to perform the review and evaluative function set forth in section 10 of S. 949, which authorizes the designated agency to establish an advisory council for this purpose. My Commonwealth, for example, already has the Governor's Advisory Committee on Science and Technology composed of 15 experts in various fields of science and engineering. This body will be involved in "Operation Alert" which, in Governor SCRANTON's words:

Is a unique new program designed to get Pennsylvania in on the ground floor of economic opportunities flowing from new scientific and technological advances.

The advisory committee might well be the appropriate agency to serve as the advisory council envisioned in section 10 of S. 949 and S. 2083.

Finally, Mr. President, I feel that Congress should have the opportunity to review and evaluate the effectiveness of this technical services program after a reasonable time has elapsed. S. 949 gives an open-ended authorization to the Secretary of Commerce which is limited only by the amount of funds to be put up by the States and other non-Federal sources. My bill established annual ceilings for each of the first 5 years of the

program in the total amount of \$105 million. This is a generous figure based on Commerce Department estimates that the first year of the program will cost the Federal Government \$5 million while the ultimate annual cost is estimated at around \$30 to \$40 million.

With these three modifications and some other proposed changes embodied in my bill, I think that this legislation can make a real contribution to the industrial and economic growth of Pennsylvania and other States and regions of this Nation.

The PRESIDING OFFICER. The question is on agreeing to the committee amendments.

The amendments were agreed to.

The bill was ordered to be engrossed for a third reading, was read a third time, and passed.

COLLEGE STUDENTS ASSISTANCE ACT OF 1965—INTRODUCTION OF BILL

Mr. HARTKE. Mr. President, today I am offering for myself and Senators MCCARTHY and WILLIAMS of New Jersey, a bill entitled the College Students' Assistance Act of 1965. It is a very simple bill whose effect would be to undergird students faced with the costs of attending college by providing for them, following completion of academic work in good standing, \$100 at the end of each semester, or a pro rata portion if the school is on some other calendar system.

Mr. President, while the returns from investments in higher education are most attractive economically, the cost of the investment to the average American family is prohibitive at worst and a tremendous burden at best. The result is a great loss of potential college-qualified youth to the overcrowded job market at lower levels.

In testimony last year before the Education Subcommittee, Commissioner Francis Keppel of the Office of Education noted the annual cost of attending college in public institutions—less expensive than private colleges—has risen from a low of \$730 in 1930 to \$1,480 today and a projected \$2,400 in 1980. The 1962-63 average direct cost in private institutions already reaches \$2,240. In comparing these average cost figures with the annual median family income of \$5,700, Dr. Keppel points out that college education is an "extremely large outlay for most American families," second only to the purchase of a home. For a family of three children such an expenditure may amount to \$18,000 in public institutions over a period of 8 years, while in private institutions the figure would climb to \$27,000.

Such heavy expenditures are doubtless responsible for many of the 100,000 to 200,000 high-aptitude students who do not finish their education. Considerable numbers of interested and able students find college beyond their means, and thus, never begin higher education work. The result is a restricted range of job opportunities for them and a serious failure to maximize our greatest natural resource—an educated populace.

S. 949

IN THE HOUSE OF REPRESENTATIVES
JANUARY 1891
REPORT OF THE SELECT COMMITTEE ON FINANCE

AN ACT

TO PROVIDE FOR THE PAYMENT OF THE DEBT OF THE UNITED STATES, AND TO PROVIDE FOR THE PAYMENT OF THE DEBT OF THE UNITED STATES, AND TO PROVIDE FOR THE PAYMENT OF THE DEBT OF THE UNITED STATES.

Enacted by the Senate and House of Representatives
of the United States of America, in Congress assembled,
JANUARY 1891.

89TH CONGRESS
1ST SESSION

S. 949

IN THE HOUSE OF REPRESENTATIVES

JULY 20, 1965

Referred to the Committee on Interstate and Foreign Commerce

AN ACT

To promote commerce and encourage economic growth by supporting State and regional centers to place the findings of science usefully in the hands of American enterprise.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

3 DECLARATION OF PURPOSE

4 SECTION 1. That Congress finds that wider diffusion and
5 more effective application of science and technology in busi-
6 ness, commerce, and industry are essential to the growth of
7 the economy, to higher levels of employment, and to the
8 competitive position of United States products in world mar-
9 kets. The Congress also finds that the benefits of federally

1 financed research, as well as other research, must be placed
2 more effectively in the hands of American business, enter-
3 prise, commerce, and industrial establishments. The
4 Congress further finds that the several States through co-
5 operation with universities, communities, and industries can
6 contribute significantly to these purposes by providing tech-
7 nical services designed to encourage a more effective appli-
8 cation of science and technology to both new and established
9 business, commerce, and industrial establishments. The
10 Congress, therefore, declares that the purpose of this Act is
11 to provide a national program of incentives and support for
12 the several States individually and in cooperation with each
13 other in their establishing and maintaining State and re-
14 gional technical service programs designed to achieve these
15 ends.

16 DEFINITIONS

17 SEC. 2. For the purposes of this Act—

18 (a) “Technical services” means activities or programs
19 designed to enable businesses, commerce, and industrial
20 establishments to acquire and use scientific and engineering
21 information more effectively through such means as—

22 (1) analyzing problems of regions and industries to
23 determine new opportunities for applying technology;

24 (2) preparing and disseminating technical reports,
25 abstracts, computer tapes, microfilm, reviews, and similar

1 scientific or engineering information, including the es-
2 tablishment of State or regional technical information
3 centers for this purpose;

4 (3) providing a reference service to identify sources
5 of engineering and other scientific expertise; and

6 (4) sponsoring industrial workshops, seminars,
7 training programs, extension courses, demonstrations, and
8 field visits designed to encourage the more effective appli-
9 cation of scientific and engineering information.

10 (b) "Designated agency" means the institution or
11 agency in each participating State, which has been desig-
12 nated as administrator of the program for such State under
13 section 3 of this Act.

14 (c) "Qualified institution" means (1) an institution of
15 higher learning with a program leading to degrees in engi-
16 neering or business administration which is accredited by
17 a nationally recognized accrediting agency or association
18 to be listed by the United States Commissioner of Education,
19 or such an institution which is listed separately after evalua-
20 tion by the United States Commissioner of Education pur-
21 suant to this subsection; or (2) a State agency or a private,
22 nonprofit institution which meets criteria of competence
23 established by the Secretary of Commerce and published in
24 the Federal Register. For the purpose of this subsec-
25 tion the United States Commissioner of Education shall pub-

1 lish a list of nationally recognized accrediting agencies or
2 associations which he determines to be reliable authority as to
3 the quality of engineering or business education or training
4 offered. When the Commissioner determines that there
5 is no nationally recognized accrediting agency or association
6 qualified to accredit such programs, he shall publish a list of
7 institutions he finds qualified after prior evaluation by an
8 advisory committee, composed of persons he determines to
9 be specially qualified to evaluate the training provided under
10 such programs.

11 (d) "Participating institution" means each qualified
12 institution in a State, which participates in the administration
13 or execution of the State technical services program as pro-
14 vided by this Act.

15 (e) "Secretary" means the Secretary of Commerce or
16 the official to whom the Secretary has delegated all or part
17 of the authority in this Act.

18 (f) "State" means one of the States of the United
19 States, the District of Columbia, the Commonwealth of
20 Puerto Rico, or the Virgin Islands.

21 PLANS AND PROGRAMS

22 SEC. 3. The Governor or other competent authority
23 of any State which wishes to receive Federal payments
24 under this Act in support of its existing or planned
25 technical services program shall designate, under appropriate

1 State laws and regulations, an institution or agency to
2 administer and coordinate that program and to prepare and
3 submit plans and programs to the Secretary of Commerce
4 for approval under this Act.

5 SEC. 4. The designated agency shall prepare and sub-
6 mit to the Secretary in accordance with such regulations as
7 he may publish—

8 (a) At the beginning of each five-year period, a five-year
9 plan which may be revised annually and which shall: (1)
10 outline the technological and economic conditions of the
11 State, taking into account its region, business, commerce,
12 and its industrial potential and identify the major
13 regional and industrial problems; (2) identify the general
14 approaches and methods to be used in the solution of these
15 problems and outline the means for measuring the impact of
16 such assistance on the State or regional economy; and (3)
17 explain the methods to be used in administering and coordi-
18 nating the program.

19 (b) An annual technical services program which shall
20 (1) identify specific methods, which may include contracts,
21 for accomplishing particular goals and outline the likely
22 impact of these methods in terms of the five-year plan;
23 (2) contain a detailed budget, together with procedures for
24 adequate fiscal control, fund accounting, and auditing, to

1 assure proper disbursement for funds paid to the State under
2 this Act; and (3) indicate the specific responsibilities
3 assigned to each participating institution in the State.

4 SEC. 5. The Secretary shall not accept a five-year plan
5 for review and approval under this Act unless the Governor
6 of the State or his designee determines and certifies that the
7 plan is consistent with State policies and objectives; and the
8 Secretary shall not accept an annual technical services pro-
9 gram for review and approval under this Act unless the
10 designated agency has, as certified thereto by the Governor
11 or his designee—

12 (a) invited all qualified institutions in the State
13 to submit proposals for providing technical services
14 under the Act;

15 (b) coordinated its programs with other States and
16 with other publicly supported activities within the State,
17 as appropriate;

18 (c) established adequate rules to insure that no
19 officer or employee of the State, the designated agency
20 or any participating institution, shall receive compensa-
21 tion for technical services for which funds are provided
22 under this Act from sources other than his employer and
23 shall not otherwise maintain any private interest in con-
24 flict with his public responsibility;

1 (d) determined that matching funds will be avail-
2 able from State or other non-Federal sources;

3 (e) determined that such technical services pro-
4 gram does not provide a service that is now available
5 or could be made available as practicably by private
6 technical services, professional consultants, or private
7 institutions;

8 (f) planned no services specially related to a par-
9 ticular firm or company, public work, or other capital
10 project except insofar as the services are of general con-
11 cern to the industry and commerce of the community,
12 State, or region;

13 (g) provided for making public all reports pre-
14 pared in the course of furnishing technical services
15 supported under this Act or for making them available
16 at cost to any person on request.

17 APPROVAL BY SECRETARY OF COMMERCE

18 SEC. 6. The Secretary shall review each five-year plan
19 and each annual program submitted by the designated
20 agency under section 4, or by the regional or interstate
21 institution under section 7, and shall approve only those
22 which (1) bear the certification required by the Governor
23 or his designee under section 5; (2) comply with regulations
24 and meet criteria that the Secretary shall promulgate and

1 publish in the Federal Register; and (3) otherwise accom-
2 plish the purposes of this Act.

3 REGIONAL OR INTERSTATE PROGRAMS

4 SEC. 7. Two or more States may cooperate in adminis-
5 tering and coordinating their plans and programs supported
6 under this Act, in which event all or part of the sums author-
7 ized and payable under section 11 to all of the cooperating
8 States may be paid to the institutions or persons authorized
9 to receive them under the terms of the agreement between
10 the cooperating States. When the cooperative agreement
11 designates a regional or interstate institution to act on behalf
12 of all of the cooperating States, it shall submit to the Secre-
13 tary for review and approval under section 6 a regional or
14 interstate five-year plan and annual regional or interstate
15 technical services program which, as nearly as practicable,
16 shall meet the requirements of section 4 and section 5.

17 SEC. 8. Notwithstanding the provisions of section 11,
18 the Secretary is authorized to increase by 10 per centum the
19 amount which he approves for any regional or interstate
20 technical services program submitted under section 7. Such
21 additional amount may be paid without requiring matching
22 funds from State or non-Federal sources.

23 SEC. 9. (a) The consent of the Congress is given to
24 any two or more States to enter into agreements or com-
25 pacts, not in conflict with any law of the United States, for

1 cooperative efforts and mutual assistance in establishing
2 regional or interstate institutions under section 7 for accom-
3 plishing the purposes of this Act.

4 (b) The right to alter, amend, or repeal this section,
5 or any consent granted pursuant to this section, is expressly
6 reserved.

7 ADVISORY COUNCIL

8 SEC. 10. Each designated agency and each regional or
9 interstate institution shall appoint an advisory council for
10 technical services, the members of which shall represent
11 broad community interests and shall be qualified to evaluate
12 programs submitted under section 4. The advisory council
13 shall review each annual program, evaluate its relation to the
14 purposes of this Act, and report its findings to the designated
15 agency and the Governor or his designee. Each report of
16 the advisory council shall be available to the Secretary on
17 request.

18 ADMINISTRATION AND PAYMENTS

19 SEC. 11. There is authorized to be appropriated for the
20 purposes of this Act, \$10,000,000 for the fiscal year ending
21 June 30, 1966; \$20,000,000 for the fiscal year ending
22 June 30, 1967; \$30,000,000 for the fiscal year ending
23 June 30, 1968; \$40,000,000 for the fiscal year ending
24 June 30, 1969; and \$40,000,000 for the fiscal year ending
25 June 30, 1970.

1 (a) From these amounts, the Secretary is authorized to
2 make an annual payment to each designated agency, regional
3 or interstate institution, or person authorized to receive pay-
4 ments in support of each approved technical services pro-
5 gram. Maximum amounts which may be paid to the States
6 under this subsection shall be fixed in accordance with regu-
7 lations which the Secretary shall promulgate and publish in
8 the Federal Register from time to time, considering (1)
9 population according to the last decennial census; (2) busi-
10 ness, commercial, industrial and economic development and
11 productive efficiency; and (3) technical resources.

12 (b) The Secretary may reserve an amount equal to not
13 more than 20 per centum of the total amount appropriated
14 each year under this section and is authorized to make pay-
15 ments to any designated agency or participating institution
16 for technical services programs which he determines have
17 special merit or to any qualified institution for additional pro-
18 grams which he determines are necessary to accomplish the
19 purposes of this Act, under criteria and regulations that he
20 shall promulgate and publish in the Federal Register.

21 (c) An amount equal to not more than 5 per centum
22 of the total amount appropriated each year under this section
23 shall be available to the Secretary for the direct expenses
24 of administering this Act.

25 (d) No amount paid under subsection (a) shall exceed

1 one-half of the cost of the approved annual technical services
2 program of the State, and for each dollar paid under sub-
3 sections (a) and (b) there shall be available for expendi-
4 ture on each approved program at least \$1 from State or
5 other non-Federal sources: *Provided*, That the Secretary may
6 pay an amount not to exceed \$25,000 a year for each of the
7 first three fiscal years to each designated agency to assist
8 in the preparation of the first five-year plan and the initial
9 annual technical services programs, without regard to any
10 requirement of this section.

11 (e) At the end of each fiscal year, all remaining
12 amounts which are appropriated for payments to the States
13 under subsection (a) and which have not been obligated
14 for payments to the States at that time, shall be available to
15 the Secretary for payments under subsection (b), until
16 expended.

17 SEC. 12. The Secretary is authorized and directed to
18 aid the States and regions in carrying out their technical
19 services programs by providing reference services which a
20 State or region may use to obtain scientific, technical, and
21 engineering information from sources outside the State or
22 region, for the purposes of this Act.

23 SEC. 13. The Secretary is authorized to establish such
24 policies, standards, criteria, and procedures and to prescribe

1 such rules and regulations as he may deem necessary or
2 appropriate for the administration of this Act.

3 LIMITATIONS

4 SEC. 14. (a) Nothing contained in this Act shall be
5 construed as authorizing a department, agency, officer, or
6 employee of the United States to exercise any direction,
7 supervision, or control over, or impose any requirements or
8 conditions with respect to the personnel, curriculum, methods
9 of instructions, or administration of any educational institu-
10 tion.

11 (b) Nothing contained in this Act shall be deemed to
12 affect the functions or responsibilities under law of any other
13 department or agency of the United States.

14 EVALUATION

15 SEC. 15. Within five years from the date of the approval
16 of this Act, and prior to the end of each five-year period
17 thereafter, the Secretary shall appoint a public committee,
18 none of the members of which shall have been directly con-
19 cerned with the preparation of plans, administration of pro-
20 grams or participation in programs under this Act. The
21 Committee shall evaluate the significance and impact of the
22 program under this Act and make recommendations concern-
23 ing the program. A report shall be transmitted to the Sec-
24 retary within sixty days after the end of each five-year
25 period.

ANNUAL REPORT

1
2 SEC. 16. (a) Each designated agency or regional or
3 interstate institution shall make an annual report to the
4 Secretary on or before the first day of September of each
5 year on the work accomplished under the technical services
6 program and the status of current services, together with a
7 detailed statement of the amounts received under any of the
8 provisions of this Act during the preceding fiscal year,
9 and of their disbursement.

10 (b) The Secretary shall make a complete report with
11 respect to the administration of this Act to the President and
12 the Congress not later than January 31 following the end of
13 each fiscal year for which amounts are appropriated pur-
14 suant to this Act.

TERMINATION

15
16 SEC. 17. Whenever the Secretary, after reasonable notice
17 and opportunity for hearing to any agency or institution
18 receiving funds under this Act finds that—

19 (a) the agency or institution is not complying sub-
20 stantially with the provisions of this Act, with the regu-
21 lations promulgated by the Secretary or with the
22 approved annual technical services program; or

23 (b) any funds paid to the agency or institution
24 under the provisions of this Act have been lost, mis-

1 applied, or otherwise diverted from the purposes for
2 which they were paid or furnished—

3 the Secretary shall notify such agency or institution that no
4 further payments will be made under the provisions of this
5 Act until he is satisfied that there is substantial compliance
6 or the diversion has been corrected or, if compliance or cor-
7 rection is impossible, until such agency or institution repays
8 or arranges for the repayment of Federal funds which have
9 been diverted or improperly expended.

10 SEC. 18. Upon notice by the Secretary to any agency or
11 institution that no further payments will be made pending
12 substantial compliance correction or repayment under section
13 17, any funds which may have been paid to such agency or
14 institution under this Act and which are not expended by the
15 agency or institution on the date of such notice, shall be
16 repaid to the Secretary and be deposited to the account of
17 the appropriations from which they originally were paid.

SHORT TITLE

19 SEC. 19. This Act may be cited as the "State Technical
20 Services Act of 1965".

Passed the Senate July 19, 1965.

Attest:

FELTON M. JOHNSTON,

Secretary.

AN ACT

To promote commerce and encourage economic growth by supporting State and regional centers to place the findings of science usefully in the hands of American enterprise.

JULY 20, 1965

Referred to the Committee on Interstate and Foreign
Commerce

AN ACT

TO AMEND THE ACTS RELATIVE TO THE REGISTRATION OF DEEDS

AND TO REPEAL THE ACTS RELATIVE TO THE REGISTRATION OF DEEDS

AND TO REPEAL THE ACTS RELATIVE TO THE REGISTRATION OF DEEDS

1871

CHAPTER

DIGEST of Congressional Proceedings

OF INTEREST TO THE DEPARTMENT OF AGRICULTURE

UNITED STATES DEPARTMENT OF AGRICULTURE
WASHINGTON, D. C. 20250
OFFICIAL BUSINESS

POSTAGE AND FEES PAID
U. S. DEPARTMENT OF AGRICULTURE

OFFICE OF BUDGET AND FINANCE
FOR INFORMATION ONLY;
NOT TO BE QUOTED OR CITED)

Issued July 30, 1965
For actions of July 29, 1965
89th-1st; No . 138

CONTENTS

Adjournment.....15	Imports.....10	Research.....8,18,41
Appropriations.....4,43,44	Intergovernmental	Retirement.....14
Atomic energy.....6	relations.....42	Rural mail.....11
Balance of payments.....46	Labeling.....10	Small business.....47
Banking.....2	Lands.....3,28	Standard of living.....40
Containers.....9	Legislative program.....14	Tariff.....16
Credit.....32	Livestock and meat.....35	Textiles.....10
Education.....7,51	Loans.....37	Trade expansion.....31
Electrification.....6,12	Marketing.....23	Trade fairs.....13
Environment.....41,48	Meat grading.....26	Travel.....33,38
Farm labor.....19	Military	Vocational
farm program.....30	construction.....14,44	rehabilitation.....34
Federal aid.....42	Pay.....21,50	Water pollution.....5
Fiscal policy.....29	Personnel.....14,21,50	Water resources...22,25,39
Food.....24,26	Postal service.....11,45	Water systems.....37
Foreign aid.....24	Poverty.....27	Weather.....36
Foreign trade...2,10,16,31	Public Law 480.....20	Wheat.....1
Freight rates.....46	Reclamation.....12,17,49	Wool.....10
Highways.....43	Reorganization.....48	

HIGHLIGHTS: see page 6

HOUSE

1. WHEAT. The "Daily Digest" states that a subcommittee of the Banking and Currency Committee voted to report to the full committee S. 2294, to extend the operation of the International Wheat Agreement Act until July 31, 1966. p. D720
Rep. Stalbaum inserted a Cooperative Legislative League resolution favoring the wheat provisions of the farm bill. p. 18041

2. BANKING; FOREIGN TRADE. The Rules Committee reported a resolution for the consideration of S. 1742, to authorize the U. S. Governor to agree to amendments to the articles of agreement of the International Bank for Reconstruction and Development and the International Finance Corporation. p. 18038
3. LANDS. The Interior and Insular Affairs Committee reported with amendment H. R. 5984, to amend R. S. 2275 and 2276 with respect to certain lands granted to the States (H. Rept. 696); and H. R. 6646, to amend the Recreation and Public Purposes Act pertaining to the leasing of public lands to States and their political subdivisions (H. Rept. 697). p. 18092
4. INDEPENDENT OFFICES APPROPRIATION BILL, 1966. Conferees were appointed on this bill, H. R. 7997 (p. 17991). Senate conferees have already been appointed.
5. WATER POLLUTION. Conferees were appointed on S. 4, the proposed Water Quality Act of 1965 (p. 17992). Senate conferees have already been appointed.
6. ATOMIC ENERGY; ELECTRIFICATION. By a vote of 275 to 125, passed without amendment H. R. 8856, to amend the Atomic Energy Act to clarify the intent of Congress regarding regulation of the sale, generation, or transmission of electric power produced through the use of nuclear facilities licensed by the Atomic Energy Commission. pp. 17992-18006
7. EDUCATION. Passed without amendment H. R. 8310, the proposed Educational Rehabilitation Act Amendments of 1965. pp. 18018-38
8. RESEARCH. The "Daily Digest" states that a subcommittee of the Interstate and Foreign Commerce Committee voted to report to the full committee with amendment H. R. 3420, to promote economic growth by supporting State and regional centers to place the findings of science usefully in the hands of American enterprise. p. D721
9. CONTAINERS. The "Daily Digest" states that a subcommittee of the Interstate and Foreign Commerce Committee voted to report to the full committee H. R. 6775, to prohibit the introduction into interstate commerce of any shipping container manufactured in the United States from imported steel unless the container is marked so as to indicate the country of origin of the steel. p. D721
10. IMPORTS; LABELING. The "Daily Digest" states that a subcommittee of the Interstate and Foreign Commerce Committee voted to report to the full committee H. R. 7043, to amend the Textile Fiber Products Identification Act and the Wool Products Labeling Act of 1939 in order to require that improved woven labels must have woven into them the name of the country where woven. p. D721
11. RURAL MAIL SERVICE. Rep. Langen announced that he had requested an accounting by the General Accounting Office of the "actions of the U. S. Post Office Department in their curtailment of service to rural areas..." p. 18044
12. RECLAMATION. Rep. Saylor called a Bureau of Reclamation pamphlet "misleading" in its presentation of a "glowing picture of repayment of the Federal investment in electric power..." pp. 18066-7
13. TRADE FAIRS. Rep. Gonzalez inserted an editorial discussing HemisFair 1968, an international exposition to be held in San Antonio, Tex. p. 18080

August 17, 1965

7. TRANSPORTATION. The "Daily Digest" states that conferees agreed to file a report on H. R. 5401, to amend the Interstate Commerce Act so as to strengthen and improve the national transportation system. p. D806
8. LABOR STANDARDS. The "Daily Digest" states that the Education and Labor Committee voted to report (but did not actually report) "H. R. 10275, to amend the Fair Labor Standards Act of 1938 to extend its protection to additional employees and to raise the minimum wage; a clean bill will be introduced." p. D805
A subcommittee of the Education and Labor Committee voted to report to the full committee H. R. 10238, to provide labor standards for certain persons employed by Federal contractors to furnish services to Federal agencies. p. D805
9. RESEARCH. The Interstate and Foreign Commerce Committee voted to report (but did not actually report) with amendment H. R. 3420, to promote economic growth by supporting State and regional centers to place the findings of science usefully in the hands of American enterprise. p. D805

SENATE

10. MILITARY CONSTRUCTION APPROPRIATION BILL. The Appropriations Committee reported ^{with amendments} this bill, H. R. 10323, which includes funds to repay CCC for certain family housing projects (S. Rept. 620). pp. 19832-3
11. LABOR-HEW APPROPRIATION BILL. Agreed to the conference report on this bill, H. R. 7765 (pp. 19842-46). This bill will now be sent to the President.
12. PUBLIC WORKS APPROPRIATION BILL. A subcommittee of the Appropriations Committee voted to report to the full committee with amendments this bill, H. R. 9220, which includes funds for St. Lawrence Seaway Development Corporation, Tennessee Valley Authority, Delaware River Basin Commission, Bureau of Reclamation, etc. p. D802
13. POVERTY. Continued debate on H. R. 8283, to expand the war on poverty and enhance the effectiveness of programs under the Economic Opportunity Act of 1964. pp. 19862-4, 19880-909
14. INSECTICIDES. Received from this Department a proposed bill to amend the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, to provide for more effective regulation under such act; to Agriculture and Forestry Committee. p. 19832
15. FORESTRY. Received a California State Recreation Commission resolution "relating to the 4-percent charge in lease agreements for certain areas within the national forests." p. 19832
16. FOREIGN AID. Sens. Morse and Javits paid tribute to the Alliance for Progress on its fourth anniversary and Sen. Morse commended and inserted the President's speech on its progress. pp. 19840-42, 19866-78
17. WATER SUPPLY. Sen. Kuchel expressed hope that funds would be made available for continuation of the atmospheric water research program and inserted a series of articles dealing with weather modification. pp. 19846-48

18. FOREIGN TRADE. Sen. Young, N. Dak., inserted an editorial, "Our Stupid Wheat Policy," critical of "a Federal order that half of all wheat shipped to Russia must be hauled in American ships." p. 19850
19. MILK; PESTICIDES. Sen. Brewster emphasized the importance of continuing the indemnity payments to farmers who "through no fault of their own, have had their milk barred from commercial markets because it contained minute traces of chemicals which were approved for use by the Federal Government...but are no longer considered acceptable." p. 19860
20. CONSUMER AFFAIRS. Sen. Moss inserted an article paying tribute to Mrs. Esther Peterson, Special Assistant for Consumer Affairs. pp. 19861-2
21. EXPORT EXPANSION. Sen. Morse commended the appointment of Robert F. Dwyer, Oreg., to the post of vice chairman of the National Export Expansion Council and discussed some of the functions of the Council. pp. 19919-20
Sen. Dirksen pointed out that "the market for beef in the United Kingdom and Europe is constantly growing" and that their "major beef supplier, the Argentine, seems to be facing disaster in its own beef export efforts" making a good opportunity for the U. S. to expand its meat exports. pp. 19909-10
22. CIGARETTE LABELING. Sen. Magnuson expressed disappointment in the form in which the cigarette labeling bill "finally emerged from the Senate-House conference" and inserted several articles on the subject. pp. 19911-13

ITEMS IN APPENDIX

23. FEDERAL EXPENDITURES. Extension of remarks of Sen. Thurmond warning that money that is spent by the Federal Government "must come from the people" and inserting an article on the subject. pp. A4579-80
24. ELECTRIFICATION. Rep. Burke inserted two articles discussing the production of electric power in relation to hydroelectric systems versus nuclear powerplants. pp. A4580-1
25. WATER. Extension of remarks of Rep. Morse urging adoption of both emergency measures and efforts on a long-term basis to combat the drought in the Northeast and inserting an article, "Lesson in the Drought." p. A4584
Rep. St. Onge inserted a speech by Sen. Edward M. Kennedy before the northeastern area meeting of the National Association of Soil and Water Conservation Districts proposing a 10-point program for future growth in soil and water conservation. pp. A4610-11.
26. LEGISLATIVE ACCOMPLISHMENTS. Extension of remarks of Rep. Kirwin praising the record and leadership of the 89th Congress and inserting an article appraising the legislation that has been enacted. pp. A4585-8
27. PUBLIC WORKS. Extension of remarks of Rep. Schisler endorsing the passage by the House of the public works and economic development bill of 1965. p. A4604
Extension of remarks of Rep. Todd expressing opposition to the public works and economic development bill of 1965. p. A4605
28. FOREIGN AID. Rep. McVicker inserted an article by Prof. Ragaei El Mallakh, "The Cloudy Future for Foreign Aid." pp. A4606-7.
29. FARM PROGRAM. Rep. Randall inserted an address by Secretary Freeman before the Missouri Farmers' Association summarizing improvements in agricultural income in the past four years and urging enactment of the farm bill. pp. A4608-9

August 19, 1965

2. FOREIGN AID. Agreed to 244 to 150, the conference report on H. R. 7750, the foreign aid authorization bill (pp. 20228-33). See Digest 152 for items of interest.

Rep. Udall commended the Alliance for Progress on its fourth anniversary. pp. 20315-6

3. TRANSPORTATION. Agreed to the conference report on H. R. 5401, to amend the Interstate Commerce Act so as to strengthen and improve the national transportation system. This bill will now be sent to the President. pp. 20234-5
4. STATE-JUSTICE-COMMERCE-JUDICIARY APPROPRIATION BILL. Agreed to the conference report on this bill, H. R. 8639. pp. 20233-4
5. FOREIGN TRADE. Conferees were appointed on H. R. 7969, to correct certain errors in the Tariff Schedules of the U. S. (p. 20228). Senate conferees have already been appointed.
Conferees were appointed on H. R. 5768, to extend for an additional 3-year period (until Nov. 7, 1968) the existing suspension of duties on certain classifications of yarn of silk (p. 20228). Senate conferees have not yet been appointed.

6. RESEARCH. The Interstate and Foreign Commerce Committee reported with amendment H. R. 3420, to provide economic growth by supporting State and regional centers to place the findings of science usefully in the hands of American enterprise (H. Rept. 817). p. 20322

7. FOREIGN SERVICE. The Foreign Affairs Committee reported with amendment H. R. 6277, to amend the Foreign Service Act of 1946 (H. Rept. 830). p. 20322

8. APPROPRIATIONS. The Appropriations Committee reported without amendment H. R. 10586, making supplemental appropriations to HEW for fiscal year 1966 (H. Rept. 818). p. 20322

9. RECLAMATION. A subcommittee of the Interior and Insular Affairs Committee voted to report to the full committee with amendment H. R. 4851, to amend the Small Reclamation Projects Act of 1956. p. D823

10. TRANSPORTATION RESEARCH. The Interior and Insular Affairs Committee voted to report (but did not actually report) with amendment H. R. 5863, to authorize the Secretary of Commerce to undertake research and development in high-speed ground transportation. p. D823

11. INSECTICIDES; FISHERIES. A subcommittee of the Merchant Marine and Fisheries Committee voted to report to the full committee S. 1623, to authorize a continuing study by Interior of the effects of insecticides, herbicides, fungicides, and other pesticides upon fish and wildlife for the purpose of preventing losses, and H. R. 23, with amendment, to authorize Interior to initiate a program for the conservation and development of anadromous fish in cooperation with the States. p. D823

12. ORGANIZATION; LAWS. A subcommittee of the Judiciary Committee voted to report to the full committee H. R. 10104, to codify the general and permanent laws relating to the organization of the Federal Government and to its employees. p. D823

13. PERSONNEL; MANPOWER. Received a report of the Post Office and Civil Service Committee on current manpower issues in the Federal Government (H. Rept. 816). p. 20322
14. WATER RESOURCES. Rep. Brock spoke in support of his bill, H. R. 10539, to establish a national water resources trust fund for research and development of water resources and their use. p. 20310
15. LEGISLATIVE PROGRAM. Rep. Albert announced that H. R. 9567, the proposed Higher Education Act of 1965, will be considered next week. pp. 20299-300
16. ADJOURNED until Mon., Aug. 23. p. 20321

SENATE

17. POVERTY. Passed with amendments H. R. 8283, to expand the war on poverty and enhance the effectiveness of programs under the Economic Opportunity Act of 1964 (pp. 20325, 20326-30, 20332-37, 20340-78). Conferees were appointed (p. 20377). The bill amends title III (Special Programs to Combat Poverty in Rural Areas) of the Economic Opportunity Act so as to make clear that prohibition against loans to cooperatives organized for manufacturing purposes does not prevent loans to cooperatives processing dairy products or similar edible farm products; to clarify the authority granted with respect to the types and scope of assistance and the institutions through which assistance may be extended to migrant workers and their families; and to authorize the appropriation of \$55 million for fiscal year 1966 for carrying out the purposes of title III.
Agreed to the following amendments:
 - By Sen. McGovern, to assure that benefits under the legislation are distributed equitably between the urban and rural areas. pp. 20353-54
 - By Sen. Javits, to authorize hearings on a Governor's request regarding proposed contracts, agreements, grants, loans, or other assistance for carrying out titles I and II covering youth programs for urban and rural community action programs. pp. 20354-57Rejected the following amendments:
 - By Sen. Prouty, 44-48, and Sen. Dominick, 49-42, to permit a Governor's veto on youth, urban and rural community action programs. pp. 20326-37
 - By Sen. Prouty, 35-38, to provide that all functions under title III (relating to rural areas) be transferred to the Secretary of Agriculture. pp. 20341-46
18. STOCKPILE. The Armed Services Committee reported without amendment H. R. 9544, to authorize the disposal, without regard to the prescribed 6-month waiting period, of approximately 620,000 long tons of natural rubber from the national stockpile (S. Rept. 626). p. 20378
19. LOANS. The Agriculture and Forestry Committee reported with amendment H.R. 4152, to provide means for expediting the retirement of Government capital in the Federal intermediate credit banks, including an increase in the debt permitted such banks in relation to their capital and provision for the production credit associations to acquire additional capital stock therein, and to provide for allocating certain earnings of such banks and associations to their users (S. Rept. 630). p. 20378

STATE TECHNICAL SERVICES ACT OF 1965

AUGUST 19, 1965.—Committed to the Committee of the Whole House on the State of the Union and ordered to be printed

Mr. HARRIS, from the Committee on Interstate and Foreign Commerce, submitted the following

REPORT

[To accompany H.R. 3420]

The Committee on Interstate and Foreign Commerce, to whom was referred the bill (H.R. 3420) to promote economic growth by supporting State and regional centers to place the findings of science usefully in the hands of American enterprise, having considered the same, report favorably thereon with amendments and recommend that the bill as amended do pass.

The amendments strike out all after the enacting clause and insert a substitute amendment which appears in the reported bill in italic type, and amend the title of the bill to conform to the substitute amendment.

PURPOSE AND DESCRIPTION OF THE BILL

The reported bill would authorize a 3-year program of matching Federal grants to the States in a cooperative effort to disseminate the findings of science and technology throughout American business, commerce, and industry. The purpose of the proposed legislation is to speed industrial and economic growth of the States and the country through an improved application of technical and scientific knowledge. The achievement of an improved application of technical and scientific knowledge under this program and with the cooperation of universities, communities, and industries will lead to three objectives: (1) strengthening the Nation's economy by upgrading industries through the utilization of advanced technology, thereby generally expanding the industrial base; (2) increasing employment by facilitating industrial use of technology and the manufacturing of new products which result; and (3) enhancing the competitive position of U.S. products in world markets.

The emphasis of the proposed legislation is on State participation in technical services programs, planned locally, and designed specifically to place findings of science and technology into the hands of local businesses and industries.

To qualify for Federal matching funds, a State would designate an agency responsible for preparing and administering technical services programs within the State. One agency could be designated where two or more States wish to join in a cooperative program. Under the bill (sec. 8(a) of the reported bill) Congress would give prior consent to agreements or compacts entered into by two or more States, subject to the reservation by Congress to alter, amend, or repeal such consent. State and interstate programs would be formulated and put into effect with local initiative and responsibility. All qualified institutions in a given State would be invited to submit proposals, and, conceivably all such institutions could participate in a State program.

Under section 10 of the proposed legislation, as reported, the Secretary of Commerce at his discretion would be empowered to reserve up to 20 percent of the total annual appropriation for each year. This reserve could be used to make payments to any designated agency or participating institution for programs which the Secretary determines have special merit or to any qualified institution for additional programs which he determines are necessary under criteria and regulations which shall be promulgated and published in the Federal Register. (The criteria which the Secretary would use appear in correspondence referred to later in this report and are included at the end of the report.)

STATE PARTICIPATION

To qualify for matching Federal funds, a State would designate an agency to prepare and administer a plan and program for that State. Two or more States could join in a cooperative program administered by a designated agency. The designated agency would prepare a 5-year plan outlining the technical and economic problems and prospects in the State and how a technical service program could be used.

The sum of \$25,000 a year in Federal funds for the first 3 years on a nonmatching basis could be made available to any State to help prepare its program. Advisory councils which would reflect broad local interests are provided for. All qualified institutions in a State must be invited to submit proposals. Qualified institutions are defined as those of higher learning which have accredited programs leading to a degree in science, engineering, or business administration and competent nonprofit organizations.

The intent of the section defining qualified institutions (sec. 2(c) of the bill as reported) is to insure that the institutions or agencies which are "qualified" have competence in applying and disseminating scientific and engineering information in a manner that will accomplish the purposes of the act. Accredited institutions with engineering or business administration programs generally have the competence and experience necessary to working successfully with business and industry. Institutions having science programs only may also make valuable contributions to the program if their curricula include an applied science program or if they have established a relationship with business or industry which shows that they will be able to contribute to administration or execution of the local technical services program. However, your committee does not intend to

include those institutions having science programs of a highly academic nature only.

The State program would outline a budget and assign responsibilities to qualified institutions which participate. The designated agency would then submit the plan and the first annual program to the Secretary of Commerce through the Governor of the State who would certify that the plan is consistent with State policies and objectives and that the program was developed under procedures and guidelines set out in the bill. These provide for rules to avoid conflicts of interest, as well as requirements to assure non-Federal matching funds and prohibitions to avoid duplication of programs, or special treatment for particular firms.

The proposed legislation provides for the establishment of policies, standards, criteria and procedures and the prescription of rules and regulations by the Secretary of Commerce for the administration of the legislation.

In allocating Federal funds which would be payable to the individual States, the Secretary would be required to fix maximum amounts which could be paid to such States. The regulation which would establish the criteria for such maximum amounts would take into account population and industrial and economic development and the productive efficiency and technical resources in the individual States.

The Secretary has informed the committee that the least populous State would be eligible annually for grants up to \$150,000, and the most populous would be eligible annually for no more than \$2 million. No State could receive more than its limit, but could get less depending on the merit of its proposals.

COMMITTEE HEARINGS

The committee held 3 days of hearings on H.R. 3420 and the program was endorsed by public and private witnesses including Members of Congress, representatives of State governments, State universities, land-grant colleges, professional engineers and nonprofit research organizations. The National Association of Manufacturers was the only organization which filed in opposition to the bill.

The Interstate and Foreign Commerce Committee, while in accord with the general purposes of the legislation found it necessary and desirable to draft a number of amendments to and provide for the deletion of other sections of the bill as introduced. These include the following substantive changes. The definition of "qualified institution" (sec. 2(c) of the reported bill) was enlarged to include institutions which offer a degree in science. An original provision which would have allowed the Secretary of Commerce to increase by 10 percent the amount which he could approve for States cooperating in a joint program under section 7 of the reported bill on a non-matching fund basis was deleted and in section 9 of the reported bill the committee would prohibit the payment of compensation to members of advisory councils but permit them to be reimbursed for necessary expenses.

The Department of Commerce first contemplated a continuing program without monetary limitations. In the hearing the Department supported a 5-year program and sought a total authorization of \$140 million. The committee in the reported bill (secs. 10(a) and

15) reduced this to a 3-year program and an authorization of \$60 million which should not be in excess of \$10 million for the first year, \$20 million for the second year, and \$30 million for the third year.

The committee also would require the Governor of each participating State to certify that its technical service program does not provide a service which, on the date of certification, is economically and readily available in such State from private technical services, professional consultants, or private institutions (sec. 5(e) of the bill as reported). This was adopted to avoid encroachment on private enterprise. It is also the sense of the committee, as well as the tenor of the Commerce Department's testimony, that this bill is directed to gathering and disseminating existing technical and scientific information for business, commerce, and industries and that funds authorized for this purpose are not to be used for research and development. In short, the intent is to assist businesses and industries, not to compete with them.

The committee added a provision (sec. 10(e)(2) of the bill as reported) which would prohibit the payment of funds to any designated agency, institution, or person to carry out a technical services program which duplicates any activity or program readily available in a State from a Federal or State agency, including publicly supported institutions of higher learning.

The committee deleted section 11(e) of the bill as introduced. This provision would have made available to the Secretary of Commerce as additions to the 20 percent reserve (discussed in the preceding section of this report) all amounts appropriated for payments to the States which were not obligated at the end of the fiscal year for which appropriated. These additions to the reserve would have been available until expended. By deletion of this provision, any amounts appropriated for payment to the States but not obligated will revert to the Treasury.

Further the committee wrote a new section 18 which requires recordkeeping and provides for the auditing of books, documents, papers, and records by the Secretary of Commerce and the Comptroller General of the United States.

The committee recognizes that the technical services program and the legislation here reported are of necessity framed in general terms. Because of the prospective nature of the programs contemplated, the Department of Commerce cannot predict the precise extent of Federal contributions which will be required. However, some additional information and details on this were brought to light through an exchange of correspondence between Subcommittee Chairman Macdonald and the Secretary of Commerce. These are included at the end of this report. With the cutback from a 5-year to a 3-year authorization, the prohibitions against competition with or duplication of similar private enterprise programs, and the additional requirements for records and annual reports, it is the opinion of your committee that this broad Federal-State program should be initiated. It can be tested on an experimental basis and held to a close annual accounting as well as a complete review as to its value prior to the expiration of the 3-year period. With the benefit of experience, and upon a complete review, a determination can be made as to whether, and if so the financial level at which, the technical services program should be continued.

The hearings reflect that a number of States are already well underway in the implementation of similar programs. The proposed legislation should assist those States which have already embarked on such programs, as well as serve as an incentive to additional States to enter this important field.

At the national level, as distinct from the State and local level contemplated here, the Federal Government has already gained considerable experience in comparable services. There is within the Department of Commerce a Clearinghouse for Federal Scientific and Technical Information. It is expected, and the Department has stated, that full advantage will be taken of its existing staff resources and that the Clearinghouse will be used to service State requests for publications and to help stock the reference depositories many States are expected to establish. (For a description of the Clearinghouse, its functions, staffing and budget, as well as a description and proposed staffing of an Office of State Technical Services which would be responsible for carrying out the Department of Commerce's functions under this bill, see Secretary Connor's June 22, 1965, letter to Congressman Macdonald which appears at pp. 122-123 of the hearings on this legislation.)

For the information of the committee and the Congress, and in response to a request from the committee, the Secretary of Commerce submitted the following summary concerning existing State programs.

GENERAL STATEMENT ABOUT EXISTING STATE PROGRAMS OF TECHNICAL ASSISTANCE TO INDUSTRY

The task of coupling advanced science and technology to industrial use is best undertaken by local institutions specifically charged with bringing new technology to bear on local industrial and economic problems.

There is considerable experience in industrially oriented programs from which to draw. About 28 States now operate university-industry programs of various kinds. All are small in comparison to the need and opportunity in their regions, but a few stand out because of their greater scope and effectiveness to date. Of these, four have been chosen for illustration. They represent four of the many different styles of operation which may be used, with equal effectiveness, in different regions. The programs described are only a partial list, and are included because they are comparable to the kinds of activities envisaged by the State technical service program.

Iowa

The center for industrial research and service at Iowa State University was established in July 1963, as a part of the university's college of engineering. The stated goal was to assist in the industrial growth of Iowa through the following three functions:

(a) Coordination of industrial needs with the technical capabilities and specialties available in the State and, particularly, those available through the staff and facilities of Iowa State University.

(b) Assist with special problems facing industries in Iowa by full-time staff assigned to work directly with the center.

(c) Publication of technological information from research and extension activities relating to the industrial climate and growth of Iowa.

During the past 18 months the following accomplishments can be noted:

- (a) Over 1,500 calls have been made on Iowa industries.
- (b) A wide variety of cases and problems, totaling over 460, have been handled.
- (c) Most of the consulting firms and other professional groups in the State have been cataloged for reference, including:
 - 1. Engineers.
 - 2. Architects.
 - 3. Patent attorneys.
 - 4. Certified public accountants.
 - 5. Testing laboratories.
 - 6. Advertising agencies.
 - 7. University professors.
- (d) An information retrieval system has been put into use.
- (e) Reports of completed research have been prepared on a number of subjects.

A summary of the 460 cases handled to date indicates the type of work being done. Fifty-six percent of the cases came from business firms and manufacturers, 32 percent from individuals, 8 percent from other Government agencies, 2 percent from development groups, and 2 percent came from trade associations and miscellaneous sources.

Georgia

The development division at the Georgia Institute of Technology was established in 1956 as part of the engineering experiment station, with a main office in Atlanta and field offices in other cities.

The overall goal of the division is to develop the natural, human, and man-made resources of Georgia and the Southeast. Operations cover several major fields, including: industrial technical services, manpower resource analysis, and industrial economic analysis. Areas of staff specialization include chemical engineering, civil engineering, electrical engineering, industrial engineering, management engineering, mechanical engineering, textile engineering, textile manufacturing, agricultural economics, area development, business administration, business education, chemistry, economic geology, economics, geography, industrial management, journalism, library science, marketing, and sociology.

A basic data unit provides research reference sources for the staff as well as for outside groups. In addition to these continuing activities, special studies of statewide resources and overall development problems are conducted periodically.

More than 250 major technical assistance projects for business and industrial firms have been completed by the industrial services staff and field office personnel. About 2,000 requests a year are received for information, and a backlog of 10 to 15 requests for technical assistance is not uncommon. These requests usually develop without direct solicitation. Recently, this program has been expanded under the auspices of the Associated Industries of Georgia, an association of most of the major industrial firms in the State.

Professional consulting firms in the area are kept fully informed of progress and activities through an advisory council which meets monthly with members of the institute staff. Without exception the response of consultants has been favorable.

North Carolina

The industrial extension service of the school of engineering at North Carolina State University was established by the State in 1955 to achieve a greater utilization of North Carolina's raw materials, and to develop its small industries.

The staff provides the following types of services, among others:

- (a) Technical studies, analyses and assistance.
- (b) Industrial film library.
- (c) Information distribution.
- (d) Workshops and short courses.

Many of the requests for technical assistance are generated by small chemical producers.

Wisconsin

University of Wisconsin, University Extension Division; chairman, Mr. Paul J. Grogan.

The university extension division operates through the Department of Engineering of the University of Wisconsin. By far, the greatest effort is in the education extension area.

The northern Wisconsin development project staff has the following objectives:

1. To work closely with firms, providing management counsel on a continuing basis in specialized areas such as: Engineering, production methods, product development, finance, and marketing. These companies are chosen on the basis of growth potential, need for assistance, and management cooperation. Technical assistance is available from private and university consultants, University of Wisconsin extension specialists, and State and Federal specialists. An integral part of this objective is the "demonstration" concept, or the use of project findings to illustrate to other firms the growth which can be realized by application of improved management and engineering methods.

2. To provide short-term assistance to other firms and to economic development groups in northern Wisconsin.

3. To provide an advisory and referral service aimed at interpreting the broad range of assistance available from the University of Wisconsin and approximate Federal and State agencies, as well as private sources.

4. To encourage the development of local forms of permanent support for this type of service to the business community.

SECTION-BY-SECTION DESCRIPTION OF H.R. 3420, AS REPORTED

SECTION 1—DECLARATION OF PURPOSE

This section sets forth findings by the Congress that—

(1) wider diffusion and more effective application of science and technology in business, commerce, and industry are essential (a) to the growth of the economy, (b) to higher levels of employment, and (c) to the competitive position of U.S. products in world markets;

(2) the benefits of federally financed and other research must be placed more effectively in the hands of American business, commerce, and industrial establishments; and

(3) the several States through cooperation with universities, communities, and industries can contribute significantly to these

purposes by providing technical services designed to encourage a more effective application of science and technology to both new and established business, commerce, and industrial establishments.

On the basis of these findings, the Congress declares that the purpose of this legislation is to provide a national program of incentives and support for the several States individually and in cooperation with each other in establishing and maintaining State and interstate technical service programs designed to achieve these ends.

SECTION 2—DEFINITIONS

This section defines certain terms used in this legislation. These terms are used in this section-by-section description as so defined.

(a) "Technical services" is defined to mean activities or programs designed to enable business, commerce, and industrial establishments to acquire and use scientific and engineering information more effectively through such means as (1) preparing and disseminating technical reports, abstracts, computer tapes, microfilm, reviews, and similar scientific or engineering information, including the establishment of State or regional technical information centers for this purpose; (2) providing a reference service to identify sources of engineering and other scientific expertise; and (3) sponsoring industrial workshops, seminars, training programs, extension courses, demonstrations, and field visits designed to encourage the more effective application of scientific and engineering information.

(b) "Designated agency" is defined to mean the institution or agency which has been designated as administrator of a technical services program for one or more States under this legislation.

(c) "Qualified institution" is defined to mean (1) an institution of higher learning with a program leading to a degree in science, engineering, or business administration which is accredited by a nationally recognized accrediting agency or association to be listed by the Commissioner of Education, or such an institution which is listed separately after evaluation by the Commissioner of Education; or (2) a State agency or a private, nonprofit institution which meets criteria of competence established by the Secretary of Commerce and published in the Federal Register.

Under subsection (c) the Commissioner of Education would publish a list of nationally recognized accrediting agencies or associations which he determines to be reliable authority as to the quality of science, engineering, or business education or training offered. If the Commissioner determined that there is no nationally recognized accrediting agency or association qualified to accredit such programs, he would publish a list of institutions he finds qualified after prior evaluation by an advisory committee, composed of persons he determines to be specially qualified to evaluate the training provided under such programs.

(d) "Participating institution" means each qualified institution in a State, which participates in the administration or execution of a technical services program under this legislation.

(e) "Secretary" means the Secretary of Commerce.

(f) "State" is defined to mean one of the States of the United States, the District of Columbia, the Commonwealth of Puerto Rico, or the Virgin Islands.

(g) "Governor," in the case of the District of Columbia, means the Board of Commissioners of the District of Columbia.

SECTION 3—SELECTION OF DESIGNATED AGENCY

This section provides that the Governor of any State which wishes to participate in the program under this legislation must designate an agency to administer and coordinate its program and prepare and submit a 5-year plan and annual technical services programs to the Secretary for approval. Such designation would, of course, have to be made in accordance with appropriate State laws.

SECTION 4—PLANS AND PROGRAMS

Under this section, the designated agency would prepare and submit to the Secretary—

(a) A 5-year plan (1) outlining technological and economic conditions of the State, taking into account certain pertinent factors, and identifying the major regional and industrial problems; (2) identifying the general approaches and methods to be used in the solution of these problems and outlining the means for measuring the impact of such assistance on the State or regional economy; and (3) explaining the methods to be used in administering and coordinating the program.

(b) An annual technical services program (1) identifying specific methods for accomplishing particular goals and outlining the likely impact of these methods in terms of the 5-year plan; (2) containing a detailed budget, together with procedures for adequate fiscal control, fund accounting, and auditing, to assure proper disbursement for funds paid to the State under this legislation; and (3) indicating the specific responsibilities assigned to each participating institution in the State.

SECTION 5—REVIEW OF PLANS AND PROGRAMS BY THE SECRETARY

The Secretary would be prohibited from receiving a State's 5-year plan for review and approval unless the Governor of the State or a person designated by the Governor certifies that the plan is consistent with policies and objectives of the State.

The Secretary could not receive a State's annual technical service program for review and approval unless the Governor or a person designated by him certifies that the State's designated agency has (a) invited all qualified institutions in the State to submit proposals for providing technical services under this legislation; (b) coordinated its programs with other States and with other publicly supported activities within the State, as appropriate; (c) established adequate rules against dual compensation for services performed in connection with the State's technical service program, and against conflicts of interest; (d) determined that matching funds will be available from State or other non-Federal sources; (e) determined that such technical services program does not provide a service which on the date of such certification is economically and readily available in such State from private technical services, professional consultants, or private institutions; (f) planned no services specially related to a particular firm or company, public work, or other capital project except insofar as the services are of general concern to the industry and commerce

of the community, State, or region; and (g) provided for making public all reports prepared in the course of furnishing technical services supported under this legislation or for making them available at cost to any person on request.

SECTION 6—APPROVAL BY THE SECRETARY

Under this section, the Secretary must review each 5-year plan and annual technical services program submitted to him by a designated agency. The Secretary would approve only those plans and programs which (1) bear the required certification, (2) comply with regulations and meet criteria promulgated and published by the Secretary in the Federal Register, and (3) otherwise carry out the purposes of this legislation.

SECTION 7—INTERSTATE PROGRAMS

This section provides that two or more States may cooperate in administering and coordinating their plans and programs supported under this legislation, in which event all or part of the sums authorized and payable under section 10 to all of the cooperating States may be paid to the designated agency, participating institutions, or persons authorized to receive them under the terms of the agreement between the cooperating States. When the cooperative agreement designates an agency to act on behalf of all of the cooperating States, it would submit to the Secretary for review and approval under section 6 an interstate 5-year plan and an annual interstate technical services program which, as nearly as practicable, would meet the requirements of section 4 and section 5.

SECTION 8—CONSENT OF CONGRESS

This section gives the consent of Congress to any two or more States to enter into agreements or compacts (not in conflict with any law of the United States) establishing interstate technical services programs under section 7 for accomplishing the purposes of this legislation. A specific reservation is made in subsection (b) of the right to alter, amend, or repeal this section or consent granted by it.

SECTION 9—ADVISORY COUNCIL

This section requires each designated agency to appoint an advisory council for technical services. The members of each such council would represent broad community interests and be qualified to evaluate the annual technical services program under this legislation. The advisory council would review each annual technical services program, evaluate its relation to the purposes of this legislation, and report its findings to the designated agency and the Governor. Each such report would be available to the Secretary on request. Members of any such advisory council could be reimbursed for their expenses, but could not be compensated for serving on the advisory council.

SECTION 10—AUTHORIZATION OF APPROPRIATIONS AND PAYMENTS

Subsection (a) authorizes the appropriation for the purposes of this legislation of \$10 million for fiscal year 1966, \$20 million for fiscal year 1967, and \$30 million for fiscal year 1968.

Under subsection (b), the Secretary would promulgate and publish in the Federal Register (from time to time) regulations under which the maximum amounts which the States could receive under subsection (b) for support of their technical services programs would be determined. These regulations would take into consideration (1) the population of the States according to the last decennial census; (2) their business, commercial, industrial and economic development and productive efficiency; and (3) their technical resources. Each designated agency with an approved technical services program would be eligible to receive an annual payment under subsection (b) from the Secretary.

Subsection (c) authorizes the Secretary to reserve up to 20 percent of the total amount appropriated under this section for each year to make payments to any designated agency or participating institution for technical services programs which he determines have special merit or to any qualified institution for additional programs which he determines are necessary to accomplish the purposes of this legislation under criteria and regulations which he would be required to promulgate and publish in the Federal Register.

Subsection (d) permits up to 5 percent of the total amount appropriated each year under this section to be used by the Secretary for the direct expenses of administering this legislation.

Paragraph (1) of subsection (e) provides that the payments made with respect to any technical services program under subsection (b) or (c) cannot exceed the amount of non-Federal funds expended to carry out such program. However, provision is made in this subsection for paying each designated agency of a State up to \$25,000 a year for each of the 3 years following its designation to assist in the preparation of the 5-year plan for its State and initial annual technical services programs without any requirement for matching. Designated agencies administering interstate technical services programs would not be eligible for such payments to assist in preparation of their plan and initial technical services programs.

Paragraph (2) provides that no funds appropriated under section 10 shall be paid to carry out any technical services activity or program in any State if it duplicates any other activity or program in that State which is readily available from Federal or State agencies, including publicly supported institutions of higher education.

SECTION 11—ASSISTANCE BY THE SECRETARY

Under the provisions of this section, the Secretary is authorized and directed to aid designated agencies in carrying out their technical services programs by providing reference services which they may use to obtain scientific, technical, and engineering information from sources outside the State or States which they serve.

SECTION 12—RULES AND REGULATIONS

This section authorizes the Secretary to establish such policies, standards, criteria, and procedures, and to prescribe such rules and regulations as he may deem necessary or appropriate for the administration of this legislation.

SECTION 13—LIMITATIONS

This section provides that nothing contained in this legislation shall (a) be construed as authorizing a department, agency, officer, or employee of the United States to exercise any direction, supervision, or control over, or impose any requirements or conditions with respect to the personnel, curriculum, methods of instruction, or administration of any educational institution, or (b) be deemed to affect the functions or responsibilities under law of any other department or agency of the United States.

SECTION 14—ANNUAL REPORT

Subsection (a) of this section requires each designated agency to make an annual report to the Secretary on the work accomplished under the technical services program and the status of current services, together with a detailed statement of the amounts received under this legislation during the preceding fiscal year, and of their disbursement.

Under subsection (b) the Secretary is required to make a complete report with respect to the administration of this act to the President and the Congress not later than January 31 following the end of each fiscal year for which appropriations are made pursuant to this legislation.

SECTION 15—EVALUATION

Under this section, within 3 years after the date of enactment of this legislation, the Secretary would be required to appoint a public committee to evaluate the program carried out under this legislation and to make recommendations concerning it. The report would be required to be transmitted to the Secretary within 60 days after the end of such 3-year period.

SECTION 16—TERMINATION

This section provides that whenever the Secretary, after reasonable notice and opportunity for hearing to any designated agency or participating institution receiving funds under this legislation finds that (a) the agency or institution is not complying substantially with the provisions of this act, with the regulations promulgated by the Secretary, or with the approved annual technical services program; or (b) any funds paid to the agency or institution under the provisions of this act have been lost, misapplied, or otherwise diverted from the purposes for which they were paid or furnished, the Secretary shall notify such agency or institution that no further payments will be made under the provisions of this legislation until he is satisfied that there is substantial compliance or the diversion has been corrected or, if compliance or correction is impossible, until such agency or institution repays or arranges for the repayment of Federal funds which have been diverted or improperly expended.

SECTION 17—REPAYMENT

This section provides that upon notice by the Secretary to any designated agency or participating institution that no further payments will be made pending substantial compliance, correction, or repayment under section 16, any funds which may have been paid to such agency or institution under this legislation and which are not expended by the agency or institution on the date of such notice, shall be repaid to the Secretary and be deposited to the account of the appropriations from which they originally were paid.

SECTION 18—RECORDS

Subsection (a) requires each recipient of a grant under this legislation to keep such records as the Secretary shall prescribe, including certain specified records.

Subsection (b) authorizes the Secretary and the Comptroller General of the United States, or any of their duly authorized representatives, to have access to any books, documents, papers, and records of the recipient that are pertinent to amounts received under this legislation.

SECTION 19—SHORT TITLE

This section provides what this legislation may be cited as the "State Technical Services Act of 1965."

AGENCY REPORTS AND RELATED MATTER

GENERAL COUNSEL OF THE DEPARTMENT OF COMMERCE,
Washington, D.C., March 15, 1965.

HON. OREN HARRIS,
*Chairman, Committee on Interstate and Foreign Commerce,
House of Representatives, Washington, D.C.*

DEAR MR. CHAIRMAN: This is in reply to your request for the views of this Department concerning H.R. 3420, a bill to promote economic growth by supporting State and regional centers to place the findings of science usefully in the hands of American enterprise.

H.R. 3420 is for the same purpose as the draft of legislation submitted to the Congress by this Department on January 15, 1965. The Department urges early enactment of H.R. 3420 for the reasons set forth in the statement of purpose and need submitted to the Congress with our draft bill. A copy of the statement of purpose and need is attached for your convenient reference.

We have been advised by the Bureau of the Budget that enactment of this legislation would be in accord with the program of the President.

Sincerely,

ROBERT E. GILES.

STATEMENT OF PURPOSE AND NEED ON PROPOSED STATE TECHNICAL
SERVICES ACT OF 1965

This proposed legislation is in response to President Johnson's direction to the Department of Commerce to explore new ways to

speed the development and dissemination of new technology. In his Economic Report of January 1964, the President stated:

"The Federal Government provides major support for the research and development which underlie our striking technological advances. In the past, much of our research and development has been connected with national defense. Now, as military outlays level off we face—

"A challenge to apply the Nation's growing scientific and engineering resources to new socially profitable uses;

"An opportunity to accelerate the technological progress of our civilian industries.

"The Federal Government should join with private business and our universities in speeding the development and spread of new technology. I have directed the Department of Commerce to explore new ways to accomplish this."

GENERAL DESCRIPTION

The proposed State Technical Services Act of 1965 would enable the Federal Government to make grants to States in support of programs to achieve more effective commercial use of the findings of science and technology. This would be done through technical services programs, planned locally, designed specifically to place these findings into the hands of local businesses and enterprises.

To qualify for Federal matching funds, a State would designate an institution or agency responsible for preparing and administering technical services programs within the State. A regional institution could be designated where two or more States wish to join in a co-operative program (10 percent more Federal support would be available for regional institutions). State and regional programs would be formulated and put into effect with local or regional initiative and responsibility. All qualified institutions in the State could participate.

NEED FOR THE PROGRAM

A close examination of the modern American economy reveals a number of recurring themes—all of them related in some degree to the importance of having effective mechanisms for introducing the results of science and technology into commercial use. For example:

The competition we face in both domestic and world markets is increasingly based on a high level of technology, not solely on lower labor costs.

The most successful competitors, whether at an international level, industrywide, or among individual companies, are those who have learned to use new technology effectively.

The cost of new technology, in the form of technical manpower and equipment, has been rapidly rising.

Opportunities to participate in benefits of technology have not been equally available in the various regions of the United States.

Substantial expenditures for specialized research and development in support of national defense and space missions have not met the full range of industrial needs for technology.

The vast increase in the Nation's total research and development effort have not eradicated long-term unemployment and economic decline in many parts of the country.

Technology cannot be effectively diffused merely by giving information to a potential user. There must be means for active interchange between those using and those furnishing information.

There are many factors involved in complete solutions to the broad problems outlined above. Common to all of them, however, is the need for institutions and mechanisms at the local level, specifically designed to bridge the gap between the most advanced technology, wherever it exists, and the industrial practices of the local region.

OBJECTIVES

Through this program and with the cooperation of universities, communities and industries, three objectives will be served: (1) strengthening the Nation's economy by upgrading industries through the utilization of advanced technology, thereby generally expanding the industrial base; (2) increasing employment by facilitating industrial's use of technology and the manufacturing of new products which result; and (3) enhancing the competitive position of U.S. products in world markets.

The proposal is based on the premise of strong local support and local initiative. The proposal is designed to stimulate local economic programs, utilizing local specialists and applying local resources with Federal matching support and encouragement. Distinct contributions to the economic vitality for our Nation will be made by those who are closest to the problems which the program is designed to meet.

HOW THE PROGRAM WOULD OPERATE

A State wishing to participate in the program would designate an institution (generally a State university or land-grant college) to administer and coordinate the State's technical services program.

The designated institution would prepare a 5-year plan, outlining the technological and economic situation in the State, the major regional and industrial problems, and the means to be used in assisting in their solution.

The designated institution would also prepare an annual technical services program, covering the objectives for the first year, the budget, and the responsibilities assigned to each qualified institution participating in the program. Up to \$25,000 per year for each of the first 3 years may be paid to the designated institution to assist in preparing the first 5-year plan and the initial annual programs.

An advisory council would be established by the designated institution to evaluate and report on the 5-year plan and the annual technical service program.

The 5-year plan and the annual program would be submitted to the Secretary of Commerce. Federal matching funds would be made available to the designated institution to support those programs found by the Secretary to meet legal requirements and to further the purposes of the act. The maximum annual payment in support of any State program will be limited by a formula to be established by the Secretary, taking into consideration three criteria: (1) Population according to the last census; (2) industrial and economic development and productive efficiency; and (3) technical resources. Supplementary matching grants, totaling up to 20 percent of the amount appropriated each year, may also be made to support programs which the

Secretary determines have special merit. These provisions are designed to assure that the program's benefits will be widely diffused throughout the Nation while at the same time reserving sufficient discretion to the Secretary to assure that funds are granted only in support of adequately developed programs which will in fact advance the purposes of the act.

The formula to be established by the Secretary will be based on objective considerations such as the proportion of working population gainfully employed, the ratio of assets of individual establishments to employees, urban population, industrial population, numbers of scientists and engineers, and the physical research facilities used for industrial purposes. The formula will be weighted to provide funds to States and regions where industrial development has lagged behind its potential and where technical resources are weak. The population criteria will be applied in a manner which will permit even the smallest States to participate in a meaningful program.

New plans are required at 5-year intervals, although they are to be revised if necessary. Annual technical services programs must be submitted to the Secretary of Commerce each year in order to qualify for annual matching funds. In administering the program and approving plans, the Secretary would consult with other agencies of the Federal Government as appropriate. An annual report is required at the conclusion of each year.

Once in operation, there is a wide variety of technical services which might be offered by the various institutions participating in the program within a particular State. For example, a technology diffusion program oriented to the needs and problems of a specific industry dominant in one State or region might offer workshops, seminars, and demonstrations in order to bring existing technology to local entrepreneurs for use in plants within the region. A technology dissemination and referral center could offer two types of services: (1) technical reports, abstracts, bibliographies, reviews, microfilm, computer tapes, and the like; and (2) referral to sources of scientific and engineering expertise in the fields of interest to the local industry. Such a center would be in continuous interaction with local business and industry, so that its services will be pertinent to the local economy. These examples by no means exhaust the list of possible technical services that might be offered in any State program. The range of services can be as wide as the range of industrial and technological interests in this country, and, within the bounds of the act, is only limited by the imagination and initiative of the persons who develop the State program.

COST

The cost to the Federal Government of the proposed program is expected to be in the range of \$5 to \$10 million for the first year and such amounts as may be necessary for effective future programs which the States justify to the Secretary of Commerce.

All funds made available to States for technical services, except regional incentives, would be matched at least equally by non-Federal funds. Direct Federal expenditures would be limited to expenditures for administration, to be held to less than 5 percent of the cost of the program, and for reference services to aid the States, and regions in collecting and processing technical information for dissemination to industry under the act.

These funds will be an investment in promoting the economic growth and widespread industrial development of the entire Nation.

COMPTROLLER GENERAL OF THE UNITED STATES,
Washington, D.C., March 15, 1965.

B-156076.

HON. OREN HARRIS,
*Chairman, Committee on Interstate and Foreign Commerce,
House of Representatives.*

DEAR MR. CHAIRMAN: By letter dated February 16, 1965, you requested our report on H.R. 3420. The stated purpose of this measure is to promote economic growth by supporting State and regional centers to place the findings of science usefully in the hands of American enterprise.

While we have no special information that would assist the committee in its consideration of the merits of H.R. 3420, we offer the following comments on certain aspects of the measure:

Inasmuch as the grants made to the institutions described in the bill would involve the expenditure of appropriated funds, it is our understanding that these expenditures would be subject to audit and review by this office, with such reports to the Congress as may be deemed necessary under the provisions of the Budget and Accounting Act, 1921 (31 U.S.C. 53) and the Accounting and Auditing Act of 1950 (31 U.S.C. 67). We note, however, that the bill would not expressly grant the Secretary of Commerce or the Comptroller General the right to examine pertinent books, records, and documents of the institutions and agencies receiving Federal grants under the provisions of the bill. We believe that access to such records is necessary for the adequate administration and audit of a grant program, and we therefore suggest that the bill be amended by including a section substantially as follows:

"Each recipient of a grant under this act shall keep such records as the Secretary shall prescribe, including records which fully disclose the amount and the disposition of such grant, the total cost of the related approved program, the amount and nature of the cost of the program supplied by other sources, and such other records as will facilitate an effective audit.

"The Secretary and the Comptroller General of the United States, or any of their duly authorized representatives, shall have access to any books, documents, papers, and records of the recipient that are pertinent to amounts paid under this act."

Section 5(g) of H.R. 3420 would require that all reports prepared in the course of furnishing technical services supported under the bill be made public or be made available at cost to any person on request. It is not clear whether, for the purposes of the bill, the cost of the reports is intended to include only the costs of printing and distribution or the full cost of preparing the reports, including research, administrative, and other costs.

Section 11(c) provides that up to 5 percent of the total amount appropriated each year shall be available for direct expenses of administration. We believe that funds for administrative expenses should be provided by the Congress each year in a specified amount on the basis of the proposed program for such fiscal year.

We have no further comments to make concerning H.R. 3420.
Sincerely yours,

JOSEPH CAMPBELL,
Comptroller General of the United States.

EXECUTIVE OFFICE OF THE PRESIDENT,
BUREAU OF THE BUDGET,
Washington, D.C., May 28, 1965.

HON. OREN HARRIS,
*Chairman, Committee on Interstate and Foreign Commerce,
House of Representatives, Washington, D.C.*

DEAR MR. CHAIRMAN: This is in response to your request for the views of the Bureau of the Budget on H.R. 3420, a bill to promote economic growth by supporting State and regional centers to place the findings of science usefully in the hands of American enterprise.

You are advised that enactment of H.R. 3420 would be in accord with the President's program.

Sincerely yours,

PHILLIP S. HUGHES,
Assistant Director for Legislative Reference.

SMALL BUSINESS ADMINISTRATION,
OFFICE OF THE ADMINISTRATOR,
Washington, D.C., July 8, 1965:

HON. OREN HARRIS,
*Chairman, Committee on Interstate and Foreign Commerce,
House of Representatives, Washington, D.C.*

DEAR MR. CHAIRMAN: This is in response to your letter of February 16, 1965, requesting my views on a bill (H.R. 3420) to promote economic growth by supporting State and regional centers to place the findings of science usefully in the hands of American enterprise.

The bill would establish a program, recommended by the President in his Economic Report of January 1964, under which the Federal Government would join with private business and educational institutions to speed the technological progress of the Nation's civilian industries. In substance, the measure would help channel the resources of a locality or region, together with the services and facilities which are already offered by the Federal Government, to assist local businessmen in translating the discoveries of science to practical use in their operations.

The program, which is to be administered by the Secretary of Commerce, would encourage the States to establish centers of technology in cooperation with local industries and educational institutions. Each of the centers would collect and disseminate in usable form technical information of particular value to the State or region, considering its economic problems and resources. Such information would include new processes of advanced technology—such as data processing, automation techniques, improved methods of economic analysis, operations research, etc.

I am strongly in favor of the bill.

However, particular care must be taken to insure that the flow of scientific information generated by the program is made meaningful

to small businessmen lacking in technological background. The Small Business Administration will be glad to cooperate with the Department of Commerce and the centers in meeting this need by means of seminars, workshops, and demonstrations.

The Bureau of the Budget has advised that there is no objection to the submission of this report from the standpoint of the administration's program.

Sincerely,

(Signed) EUGENE P. FOLEY, *Administrator*.

JULY 12, 1965.

HON. OREN HARRIS,
Chairman, Committee on Interstate and Foreign Commerce,
House of Representatives, Washington, D.C.

DEAR MR. HARRIS: The Commissioners of the District of Columbia desire to report on H.R. 3420, 89th Congress, a bill to promote economic growth by supporting State and regional centers to place the findings of science usefully in the hands of American enterprise.

Section 1 of the bill states that Congress finds that wider diffusion of science and technology in industry is essential to the economy's growth and to raise the employment level; that the benefits of federally financed and other research must be placed more effectively in the hands of American business; and that the several States through cooperation with universities and industries can contribute to these purposes by providing technical services to encourage a more effective application of science and technology. The section also states that the purpose of the bill is to provide incentive and support for the States in establishing and maintaining State and regional technical service programs designed to achieve these ends.

Section 2 defines terms used in the bill, and includes the District of Columbia within the meaning of the word "State."

Section 3 provides that any State which wishes to receive Federal payments in support of its existing or planned technical service program shall designate an institution or agency to administer the program and to prepare plans for submission to the Secretary of Commerce. If the institution designated by the State is not a State university or land-grant college then the Governor shall furnish the Secretary a written statement of his reasons for designating such other institution.

Section 4(a) of the bill requires the designated institution to submit each 5 years to the Secretary reports outlining the technological and economic conditions of the State, and identifying the major regional and industrial problems and the general approaches and methods to be used in their solution.

Section 4(b) requires annual submission of a technical services program identifying specific methods and containing a detailed budget and also indicating the specific responsibilities of each participating institution.

Section 5 provides that the Secretary shall not accept a 5-year plan unless the Governor certifies that the plan is consistent with State policies and objectives; and the Secretary shall not accept an annual program unless the Governor certifies that the designated institution has conformed to the conditions established in subsections 5(a) through 5(g).

Section 6 provides that the Secretary shall approve only the 5-year plans and annual programs which bear the certification required by the Governor and comply with the regulations that the Secretary shall publish in the Federal Register.

Section 7 allows two or more States to cooperate in administering and coordinating their plans and programs.

Section 8 provides that the Secretary is authorized to increase by 10 percent the amount which he approves for any program submitted under section 7, without requiring matching funds from State or non-Federal sources.

Section 9 gives the consent of Congress to any two or more States to enter into compacts for cooperative efforts and mutual assistance in establishing interstate institutions under section 7.

Section 10 provides that each designated institution shall establish an advisory council, the members of which shall represent broad community interests. This council shall review each annual program and report its findings to the designated institution and to the Governor.

Section 11 authorizes appropriations. Generally, the State must match in like amount any Federal funds granted, except that the Secretary may pay up to \$25,000 a year to each designated institution for each of the first 3 years to assist in the preparation of the first 5-year plan and the initial annual program without regard to the fund-matching provision.

Section 12 authorizes the Secretary to provide reference services which a State may use to obtain scientific, technical, and engineering information from sources outside the State.

Section 13 authorizes the Secretary to make regulations.

Section 14(a) provides that nothing in the bill authorizes a department, agency, or employee of the United States to exercise any control over the personnel or methods of any educational institution.

Section 15 provides that the Secretary shall appoint an independent public committee each 5 years to evaluate the program and make recommendations concerning it.

Section 16 provides that each designated institution shall make an annual report to the Secretary on the work accomplished under the program.

Section 17 provides that the Secretary may suspend the program upon a finding that the institution is not complying with the bill or regulations made thereunder, or that any funds paid to such institution have been lost, misapplied, or diverted.

Section 18 provides that upon notice by the Secretary to an institution no further payments will be made, and any funds not expended by the institution shall be repaid.

Section 19 contains a short title for the act.

Sections 6 and 10 refer to the "Governor or his designee." Since the District of Columbia does not have a Governor, the Commissioners recommend that section 2(f) be amended by specifically designating the Board of Commissioners for the District of Columbia as "Governor of a State" for the purposes of the bill. We suggest the following amendment: Page 4, line 17, insert the following: "For the purposes of this Act, the Board of Commissioners of the District of Columbia shall be deemed to be a 'Governor of a State'."

The Commissioners recommend enactment of the bill with the foregoing amendment.

The Commissioners have been advised by the Bureau of the Budget that, from the standpoint of the administration's program, there is no objection to the submission of this report to the Congress.

Sincerely yours,

WALTER N. TOBRINER,
President, Board of Commissioners, District of Columbia.

JULY 15, 1965.

HON. JOHN T. CONNOR,
Secretary of Commerce, Washington, D.C.

DEAR MR. SECRETARY: On June 1, 1965, when you appeared before the subcommittee to sponsor H.R. 3420 (State Technical Services Act of 1965) several problems arose. Some of the problems which were discussed then continue to concern us. As we further consider this far-reaching proposed legislation, it would be very helpful to have additional information on the components of the \$140 million total which you have estimated for a 5-year period. As I understood your testimony and the later information which we have, this figure would include participation by all 50 States at least so far as the fourth and fifth years of the program are concerned.

You testified when you appeared before us that you did not then have a breakdown which would be meaningful on a State-by-State basis. You did explain that the Department of Commerce would work out a formula which was not then complete which would establish a minimum amount which would go to each of the 50 States and then a maximum amount for any State. The maximum, you explained, would be worked out on a basis such as population.

In the section of the bills which have been introduced entitled "Administration and Payments" (sec. 11), subsection (a) mentions regulations which the Secretary shall promulgate and publish, considering (1) population according to the last decennial census; (2) business, commerce, industrial and economic development and productive efficiency, and (3) technical resources. For the subcommittee's consideration it would be most helpful to have the details inherent in these presently general criteria. Therefore, I am requesting that you furnish me with the details of the formula contemplated in this subsection. I would like to have the foregoing request submitted in appropriate draft form so that we can consider it as a possible amendment to section 11.

I would also like to have a similar detailed breakdown—in like form—of the criteria contemplated in subsection (b) of section 11 which is concerned with the reservation to the Secretary of Commerce of up to 20 percent of the total amount appropriated each year for special merit programs.

Your consideration of the foregoing will be appreciated, and because we now have this bill under active consideration, it would be further appreciated if we could have your reply within the next few days.

Sincerely yours,

TORBERT H. MACDONALD,
*Member of Congress,
Chairman, Subcommittee on Commerce and Finance.*

THE SECRETARY OF COMMERCE,
Washington, D.C., July 19, 1965.

HON. TORBERT H. MACDONALD,
*Chairman, Subcommittee on Commerce and Finance, Committee on
Interstate and Foreign Commerce, House of Representatives,
Washington, D.C.*

DEAR MR. CHAIRMAN: This is in response to your recent letter requesting further detail concerning H.R. 3420, the proposed State Technical Services Act of 1965.

Concerning the estimated \$140 million required for a 5-year program, the enclosed table lists the major components for each fiscal year together with the number of States expected to participate. Beginning with approximately \$10 million for the first year the program would reach approximately \$40 million for the fourth and fifth years. We do not expect full participation until the fourth and fifth years.

Concerning the formula for determining the maximum amounts which would be allocated to each State, I am enclosing a possible draft amendment as you requested. At the same time, I would like to emphasize that it is our strong view that it is not desirable to include a specific formula in the statute but rather to have, as the administration has proposed, reasonable guidelines written into the statute which would govern the exercise of administrative discretion. We believe, as a matter of policy, it would be better not to write a specific formula in the law so that the specific allocation formula could be revised later in the light of experience if there was good and sound reason to do that.

If the Congress concludes that a specific formula should be written into the statute, our best suggestion at this time is that it should be on the basis of population with a fixed amount for the least populous and most populous States. The draft amendment which we furnish in accordance with your request is based entirely on population. We also enclose a tabulation which shows the pattern of distribution among the States on the basis of the allocation formula.

You also requested a draft amendment to section 11(b) which would spell out in greater detail the criteria for making special grants. Enclosed is a draft amendment for this purpose. Here again, we believe it is not desirable to write this specifically into the law but rather this section should be administered by appropriate administrative regulation, relying on the definition of "technical services" in the bill to provide ample guidelines.

We greatly appreciate the careful and prompt attention your subcommittee is giving to this proposal. If we can be of any further assistance in any way, please let me know at once.

Sincerely yours,

(S) JOHN T. CONNOR,
Secretary of Commerce.

Enclosures.

Components of proposed State Technical Services Act, fiscal years 1966-70

	1966	1967	1968	1969	1970	5-year total
Grants for State programs.....million dollars...	6.5	13.5	20.0	27	27	94
Special grants.....do.....	2.0	4.0	6.0	8	8	28
Central referral center.....do.....	1.0	1.5	2.5	3	3	11
Administration.....do.....	.5	1.0	1.5	2	2	7
Total.....do.....	10.0	20.0	30.0	40	40	140
Maximum number of States expected to participate...	30	40	50	153	153	-----
Average payment per State.....dollars...	220,000	337,500	400,000	510,000	510,000	-----

¹ This includes the District of Columbia, Puerto Rico, and the Virgin Islands.

Pattern of distribution of maximum amounts under draft amendment (assuming \$27,000,000 available for this purpose)

Range of maximum authorizations	Total amount authorized	Number of States
\$150,000 to \$250,000.....	\$3,250,000	17
\$250,000 to \$500,000.....	7,250,000	19
\$500,000 to \$1,000,000.....	7,500,000	11
\$1,000,000 to \$1,500,000.....	5,000,000	4
\$1,500,000 to \$2,000,000.....	4,000,000	2
Total.....	27,000,000	153

¹ This includes the District of Columbia, Puerto Rico, and the Virgin Islands.

DRAFT AMENDMENTS TO SECTION 11, STATE TECHNICAL SERVICES ACT (SENATE COMMITTEE VERSION)

1. For a statutory formula, delete the last sentence of section 11(a) beginning on line 21 of page 10 up to and including line 3 on page 11. Substitute the following language:

"Maximum amounts which may be paid to the States for each fiscal year under this subsection shall be fixed and published in the Federal Register each year in accordance with the following method: The least populous State may receive a maximum amount not less than \$150,000 and the most populous State may receive a maximum amount not to exceed \$2,000,000. The maximum amount each and every other State may receive shall be an amount which bears the same relationship to the maximum amounts authorized for the least and most populous States as the population of the State bears to the population of the least and most populous States."

2. For the statutory criteria governing approval of special grants, strike everything after the comma on line 11 in section 11(b) and add: "if he also determines that such programs:

"1. Satisfy a need for technical services when the result is likely to have a national effect; or

"2. Seek to develop techniques or methods to permit more efficient acquisition and use of scientific and engineering information, for application throughout the country; or

"3. Satisfy a need resulting from unforeseen events which make the use of technology highly important to the industrial or commercial development of the country or of a State or region; or

"4. Fulfill special needs which may exist in a State or region when the State or interstate program has reached the maximum level of support or there is no State or interstate program; or

"5. Serve special needs which arise by reason of imbalance among the States in technical resources or industrial development and productivity."

ADDITIONAL VIEWS—H.R. 3420

We agree with and support the stated purpose of H.R. 3420, which is "to promote economic growth and support State and regional technical service centers which will make available a wide variety of scientific and technical knowledge to American business, enterprise, commerce, and industry." And we have worked with the committee in its efforts to improve upon the bill as it came to us from the Senate.

The first draft failed to provide for an annual review and the committee, by inserting this provision, has indicated that the program will be carefully surveyed by the Congress as it develops. But we are still concerned with what appears to us to be several significant weaknesses.

During public hearings on the bill, industrial and business organization witnesses indicated they too had some reservations about the legislation.

We realize the serious need for a solution to the problems of disseminating information from the wealth of scientific and technical knowledge available. We are also aware of the difficulties of keeping abreast of day-to-day advances in science and technology. However, this bill will neither solve all of the problems nor meet all of the needs of States most lacking in ability to put such scientific knowledge to the best use.

One of the act's more serious drawbacks is the lack of provision for matching funds in the planning stages outlined in the bill. It is our feeling that such a provision would enable the State governments to become involved in the program from the beginning and to make more certain that the money would be wisely spent. The result would be a more orderly, though somewhat slower, program development. No one could object to the lofty aims of the bill. Our primary objection stems from the fact that there are no safeguards as to the way the money will be handled in the planning stages.

We would be more favorably disposed toward the bill if the following were adopted prior to fully implementing the programs called for by the legislation:

1. Provision for more detailed assessment of the definite needs of the individual States and/or regions for the technical services authorized in this legislation.

2. Recognition of the role of present and evolving programs of the Federal Government which now provide scientific and technical information and/or services to industry and commerce, e.g., the Commerce Clearing House for Scientific and Technical Information, NASA technology utilization program with seven institutions already involved, technology utilization programs of the Department of Defense and Atomic Energy Commission, proposed national complex of scientific and technical information systems, Federal Council for Science and Technology, Science Information Exchange, and the Presidential Commission on Automation, Technology, and Economic Progress.

3. Recognition of the role of private and/or institutional programs already available which furnish technical services to commerce and industry, e.g., MIT Associates, Stanford Research, Illinois Institute of Technology, Arthur T. Little, Inc., American Society for Metals, and 28 State university programs. There are some 300 of these programs now in existence.

This is a new venture into which the Federal Government—in cooperation with States—is entering. Its primary purpose is to make available—essentially to small businesses, commerce, and industry—information which, if widely disseminated, would be helpful to them. Properly administered, it can contribute greatly to the increased efficiency of this sector of our economy. Poorly administered, it could become a paperwork burden gathering dust in 40 scattered locations with great duplication and waste.

With these observations, we wish to indicate our feeling that the program now outlined in the bill and as understood by the committee can be a useful device and can result in benefits to the business community. It can, that is, if it is carefully administered and if real effort is made to bring together present programs within the Federal Government. It will require careful attention by the Secretary of commerce to the spirit as well as the mechanics embodied in the State plans approved by him. It is our purpose here to encourage the Secretary of Commerce to extend every effort toward consolidation of governmental activities in this field and to assure that the most effective plans will be developed in anticipation of a searching look at the first report to Congress required under section 14 of the bill.

WILLIAM L. SPRINGER.
HASTINGS KEITH.
JAMES T. BROYHILL.
ANCHER NELSEN.
ALBERT WATSON.
WILLARD S. CURTIN.
SAMUEL L. DEVINE.



Union Calendar No. 369

89TH CONGRESS
1ST SESSION

H. R. 3420

[Report No. 817]

IN THE HOUSE OF REPRESENTATIVES

JANUARY 25, 1965

Mr. HARRIS introduced the following bill; which was referred to the Committee on Interstate and Foreign Commerce

AUGUST 19, 1965

Reported with amendments, committed to the Committee of the Whole House on the State of the Union, and ordered to be printed

[Strike out all after the enacting clause and insert the part printed in italic]

A BILL

To promote economic growth by supporting State and regional centers to place the findings of science usefully in the hands of American enterprise.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

3 DECLARATION OF PURPOSE

4 SECTION 1. That Congress finds that wider diffusion and
5 more effective application of science and technology in indus-
6 try are essential to the growth of the economy, to higher
7 levels of employment and to the competitive position of

1 United States products in world markets. The Congress
2 also finds that the benefits of federally financed research,
3 as well as other research, must be placed more effectively
4 in the hands of American business and enterprise. The
5 Congress further finds that the several States through co-
6 operation with universities, communities, and industries can
7 contribute significantly to these purposes by providing tech-
8 nical services designed to encourage a more effective appli-
9 cation of science and technology to both new and established
10 industries. The Congress, therefore, declares that the pur-
11 pose of this Act is to provide a national program of incentives
12 and support for the several States individually and in co-
13 operation with each other in their establishing and main-
14 taining State and regional technical service programs de-
15 signed to achieve these ends.

16 **DEFINITIONS**

17 **SEC. 2.** For the purposes of this Act—

18 (a) "Technical services" means activities or programs
19 designed to enable businesses and industries to acquire and
20 use scientific and engineering information more effectively
21 through such means as—

22 (1) analyzing problems of regions and industries to
23 determine new opportunities for applying technology;

24 (2) preparing and disseminating technical reports,
25 abstracts, computer tapes, microfilm, reviews and similar

1 scientific or engineering information, including the estab-
2 lishment of State or regional technical information cen-
3 ters for this purpose;

4 ~~(3)~~ providing a reference service to identify sources
5 of engineering and other scientific expertise; and

6 ~~(4)~~ sponsoring industrial workshops, seminars,
7 training programs, extension courses, demonstrations
8 and field visits designed to encourage the more effective
9 application of scientific and engineering information.

10 ~~(b)~~ "Designated institution" means the institution or
11 agency in each participating State, which has been desig-
12 nated as administrator of the program for such State under
13 section 3 of this Act.

14 ~~(c)~~ "Qualified institution" means ~~(1)~~ an institution of
15 higher learning with a program leading to degrees in engi-
16 neering or business administration which is accredited by
17 a nationally recognized accrediting agency or association
18 to be listed by the United States Commissioner of Educa-
19 tion, or such an institution which is listed separately after
20 evaluation by the United States Commissioner of Education
21 pursuant to this subsection; or ~~(2)~~ a State agency or a
22 private, nonprofit institution which meets criteria of compe-
23 tence established by the Secretary of Commerce and pub-
24 lished in the Federal Register. For the purpose of this
25 Act, the United States Commissioner of Education shall

1 publish a list of nationally recognized accrediting agencies
 2 or associations which he determines to be reliable authority
 3 as to the quality of engineering or business education or
 4 training offered. When the Commissioner determines that
 5 there is no nationally recognized accrediting agency or asso-
 6 ciation qualified to accredit such programs, he shall publish
 7 a list of institutions he finds qualified after prior evaluation
 8 by an advisory committee, composed of persons he deter-
 9 mines to be specially qualified to evaluate the training pro-
 10 vided under such programs.

11 (d) "Participating institution" means each qualified
 12 institution in a State, which participates in the administra-
 13 tion or execution of the State technical services program
 14 as provided by this Act.

15 (e) "Secretary" means the Secretary of Commerce or
 16 the official to whom the Secretary has delegated all or part
 17 of the authority in this Act.

18 (f) "State" means one of the States of the United
 19 States, the District of Columbia, the Commonwealth of
 20 Puerto Rico, or the Virgin Islands.

21 PLANS AND PROGRAMS

22 SEC. 3. Any State which wishes to receive Federal
 23 payments under this Act in support of its existing or planned
 24 technical services program shall designate, under appropri-
 25 ate State laws and regulations, an institution or agency to

1 administer and coordinate that program and to prepare and
 2 submit plans and programs to the Secretary of Commerce
 3 for approval under this Act. If the institution or agency
 4 designated by each State is not a State university or land-
 5 grant college entitled to benefits under the Act approved
 6 July 2, 1862 or the Act of August 30, 1890 and Acts
 7 amendatory and supplementary thereto (1 U.S.C. 301-
 8 329), the Governor or other competent State authority
 9 shall furnish the Secretary a written statement of his reasons
 10 for designating such other institution or agency.

11 SEC 4. The designated institution shall prepare and
 12 submit to the Secretary in accordance with such regulations
 13 as he may publish—

14 (a)At the beginning of each five-year period, a five-
 15 year plan which may be revised annually and which shall
 16 (1) outline the technological and economic conditions of
 17 the State taking into account its region, its industry, and
 18 its industrial potential and identify the major regional and
 19 industrial problems; (2) identify the general approaches
 20 and methods to be used in the solution of these problems
 21 and outline the means for measuring the impact of such
 22 assistance on the State or regional economy; and (3) ex-
 23 plain the methods to be used in administering and coordi-
 24 nating the program.

25 (b) An annual technical services program which shall

1 ~~(1)~~ identify specific methods, which may include contracts;
 2 for accomplishing particular goals and outline the likely im-
 3 pact of these methods in terms of the five-year plan; ~~(2)~~
 4 contain a detailed budget, together with procedures for ade-
 5 quate fiscal control, fund accounting, and auditing, to assure
 6 proper disbursement for funds paid to the State under this
 7 Act; and ~~(3)~~ indicate the specific responsibilities assigned
 8 to each participating institution in the State.

9 SEC. 5. The Secretary shall not accept a five-year plan
 10 for review and approval under this Act unless the Governor
 11 of the State or his designee determines and certifies that the
 12 plan is consistent with State policies and objectives; and the
 13 Secretary shall not accept an annual technical services pro-
 14 gram for review and approval under this Act unless the
 15 designated institution has, as certified thereto by the Governor
 16 or his designee—

17 ~~(a)~~ invited all qualified institutions in the State to
 18 submit proposals for providing technical services under
 19 the Act;

20 ~~(b)~~ coordinated its programs with other States and
 21 with other publicly supported activities within the State;
 22 as appropriate;

23 ~~(c)~~ established adequate rules to insure that no
 24 officer or employee of the State, the designated institu-
 25 tion or any participating institution, shall receive com-

1 pensation for technical services for which funds are
 2 provided under this Act from sources other than his
 3 employer and shall not otherwise maintain any private
 4 interest in conflict with his public responsibility;

5 ~~(d)~~ determined that matching funds will be avail-
 6 able from State or non-Federal sources;

7 ~~(e)~~ determined that such technical services pro-
 8 gram does not provide a service performed as practicably
 9 by private technical services, professional consultants or
 10 private institutions;

11 ~~(f)~~ planned no services specially related to a par-
 12 ticular firm or company except insofar as the services are
 13 of general concern to the community, State or region;

14 ~~(g)~~ provided for making public all reports pre-
 15 pared in the course of furnishing technical services sup-
 16 ported under this Act or for making them available at
 17 cost to any person on request.

18 APPROVAL BY SECRETARY OF COMMERCE

19 SEC. 6. The Secretary shall review each five-year plan
 20 and each annual program submitted by the designated in-
 21 stitution under section 4, or by the regional or interstate
 22 institution under section 7, and shall approve only those
 23 which ~~(1)~~ bear the certification required by the Governor or
 24 his designee under section 5; ~~(2)~~ comply with regulations
 25 and meet criteria that the Secretary shall promulgate and

1 publish in the Federal Register; and ~~(3)~~ otherwise accom-
2 plish the purposes of this Act.

3 REGIONAL OR INTERSTATE PROGRAMS

4 SEC. 7. Two or more States may cooperate in adminis-
5 tering and coordinating their plans and programs supported
6 under this Act, in which event all or part of the sums au-
7 thorized and payable under section 11 to all of the cooperat-
8 ing States may be paid to the institutions or persons author-
9 ized to receive them under the terms of the agreement be-
10 tween the cooperating States. When the cooperative agree-
11 ment designates a regional or interstate institution to act on
12 behalf of all of the cooperating States, it shall submit to the
13 Secretary for review and approval under section 6 a regional
14 or interstate five-year plan and annual regional or interstate
15 technical services program which, as nearly as practicable,
16 shall meet the requirements of section 4 and section 5.

17 SEC. 8. Notwithstanding the provisions of section 11,
18 the Secretary is authorized to increase by 10 per centum the
19 amount which he approves for any regional or interstate
20 technical services program submitted under section 7. Such
21 additional amount may be paid without requiring matching
22 funds from State or non-Federal sources.

23 SEC. 9. The consent of the Congress is given to any two
24 or more States to enter into agreements or compacts, not in
25 conflict with any law of the United States, for cooperative

1 efforts and mutual assistance in establishing regional or inter-
 2 state institutions under section 7 for accomplishing the pur-
 3 poses of this Act.

4 ADVISORY COUNCIL

5 SEC. 10. Each designated institution and each regional
 6 or interstate institution shall establish an advisory council
 7 for technical services, the members of which shall represent
 8 broad community interests and shall be qualified to evaluate
 9 programs submitted under section 4. The advisory council
 10 shall review each annual program, evaluate its relation to
 11 the purposes of this Act, and report its findings to the desig-
 12 nated institution and the Governor or his designee. Each
 13 report of the advisory council shall be available to the Sec-
 14 retary on request.

15 ADMINISTRATION AND PAYMENTS

16 SEC. 11. There is authorized to be appropriated such
 17 amounts as may be needed to carry out the purposes set
 18 forth in this section.

19 (a) From these amounts, the Secretary is authorized to
 20 make an annual payment to each designated institution,
 21 regional or interstate institution, or person authorized to
 22 receive payments in support of each approved technical
 23 services program. Maximum amounts which may be paid
 24 to the State under this subsection shall be fixed in accord-

1 ance with regulations which the Secretary shall promulgate
2 and publish in the Federal Register from time to time, con-
3 sidering ~~(1)~~ population according to the last decennial
4 census; ~~(2)~~ industrial and economic development and pro-
5 ductive efficiency; and ~~(3)~~ technical resources.

6 ~~(b)~~ The Secretary may reserve an amount equal to
7 not more than 20 per centum of the total amount appropri-
8 ated each year under this section and is authorized to make
9 payments to any designated or participating institution for
10 technical services programs which he determines have special
11 merit or to any qualified institution for additional programs
12 which he determines are necessary to accomplish the pur-
13 poses of this Act, under criteria and regulations that he shall
14 promulgate and publish in the Federal Register.

15 ~~(c)~~ An amount equal to not more than 5 per centum
16 of the total amount appropriated each year under this section
17 shall be available to the Secretary for the direct expenses of
18 administering this Act.

19 ~~(d)~~ No amount paid under subsection ~~(a)~~ shall exceed
20 one-half of the cost of the approved annual technical services
21 program of the State, and for each dollar paid under sub-
22 sections ~~(a)~~ and ~~(b)~~ there shall be available for expenditure
23 on each approved program at least \$1 from State or non-
24 Federal sources: *Provided*, That the Secretary may pay an
25 amount not to exceed \$25,000 a year for each of the first

1 three fiscal years to each designated institution to assist in
2 the preparation of the first five-year plan and the initial
3 annual technical services programs, without regard to any
4 requirement of this section.

5 ~~(e)~~ At the end of each fiscal year, all remaining
6 amounts which are appropriated for payments to the States
7 under subsection ~~(a)~~ and which have not been obligated for
8 payments to the States at that time, shall be available to
9 the Secretary for payments under subsection ~~(b)~~, until
10 expended.

11 SEC. 12. The Secretary is authorized and directed to
12 aid the States and regions in carrying out their technical
13 services programs by providing reference services which a
14 State or region may use to obtain scientific, technical, and
15 engineering information from sources outside the State or
16 region, for the purposes of this Act. There is authorized to
17 be appropriated each fiscal year such amount as may be ne-
18 cessary to provide the services authorized in this section.

19 SEC. 13. The Secretary is authorized to establish such
20 policies, standards, criteria, and procedures and to prescribe
21 such rules and regulations as he may deem necessary or
22 appropriate for the administration of this Act.

23 LIMITATIONS

24 SEC. 14. ~~(a)~~ Nothing contained in this Act shall be
25 construed as authorizing a department, agency, officer, or

1 employee of the United States to exercise any direction, su-
2 pervision, or control over, or impose any requirements or
3 conditions with respect to the personnel, curriculum, methods
4 of instructions, or administration of any educational insti-
5 tution.

6 (b) Nothing contained in this Act shall be deemed to
7 affect the functions or responsibilities under law of any other
8 department or agency of the United States.

9 EVALUATION

10 SEC. 15. Within five years from the date of the approval
11 of this Act, and prior to the end of each five-year period
12 thereafter, the Secretary shall appoint a public committee,
13 none of the members of which shall have been directly con-
14 cerned with the preparation of plans, administration of pro-
15 grams or participation in programs under this Act. The
16 committee shall evaluate the significance and impact of the
17 program under this Act and make recommendations con-
18 cerning the program. A report shall be transmitted to the
19 Secretary within sixty days after the end of each five-year
20 period.

21 ANNUAL REPORT

22 SEC. 16. Each designated institution or regional or in-
23 terstate institution shall make an annual report to the Sec-
24 retary on or before the first day of September of each year
25 on the work accomplished under the technical services pro-

1 gram and the status of current services, together with a
2 detailed statement of the amounts received under any of the
3 provisions of this Act during the preceding fiscal year, and
4 of their disbursement.

5
6 TERMINATION

7 SEC. 17. Whenever the Secretary, after reasonable
8 notice and opportunity for hearing to any institution re-
9 ceiving funds under this Act finds that—

10 (a) the institution is not complying substantially
11 with the provisions of this Act, with the regulations
12 promulgated by the Secretary or with the approved
13 annual technical services program; or

14 (b) any funds paid to the institution under the
15 provisions of this Act have been lost, misapplied, or
16 otherwise diverted from the purposes for which they
17 were paid or furnished

18 the Secretary shall notify such institution that no further
19 payments will be made under the provisions of this Act
20 until he is satisfied that there is substantial compliance or the
21 diversion has been corrected or, if compliance or correction is
22 impossible, until such institution repays or arranges for the
23 repayment of Federal funds which have been diverted or
24 improperly expended.

25 SEC. 18. Upon notice by the Secretary to any insti-

1 tution that no further payments will be made pending sub-
2 stantial compliance correction or repayment under section
3 17; any funds which may have been paid to such institution
4 under this Act and which are not expended by the insti-
5 tution on the date of such notice, shall be repaid to the
6 Secretary and be deposited to the account of the appropria-
7 tions from which they originally were paid.

8 SHORT TITLE

9 SEC. 19. This Act may be cited as the "State Technical
10 Services Act of 1965".

11 DECLARATION OF PURPOSE

12 SECTION 1. *That Congress finds that wider diffusion and*
13 *more effective application of science and technology in busi-*
14 *ness, commerce, and industry are essential to the growth of*
15 *the economy, to higher levels of employment, and to the*
16 *competitive position of United States products in world mar-*
17 *kets. The Congress also finds that the benefits of federally*
18 *financed research, as well as other research, must be placed*
19 *more effectively in the hands of American business, commerce,*
20 *and industrial establishments. The Congress further finds*
21 *that the several States through cooperation with universities,*
22 *communities, and industries can contribute significantly to*
23 *these purposes by providing technical services designed to en-*
24 *courage a more effective application of science and technol-*
25 *ogy to both new and established business, commerce, and in-*

1 industrial establishments. The Congress, therefore, declares
2 that the purpose of this Act is to provide a national program
3 of incentives and support for the several States individually
4 and in cooperation with each other in their establishing and
5 maintaining State and interstate technical service programs
6 designed to achieve these ends.

7 **DEFINITIONS**

8 **SEC. 2.** For the purposes of this Act—

9 (a) “Technical services” means activities or programs
10 designed to enable businesses, commerce, and industrial
11 establishments to acquire and use scientific and engineering
12 information more effectively through such means as—

13 (1) preparing and disseminating technical reports,
14 abstracts, computer tapes, microfilm, reviews, and similar
15 scientific or engineering information, including the es-
16 tablishment of State or interstate technical information
17 centers for this purpose;

18 (2) providing a reference service to identify sources
19 of engineering and other scientific expertise; and

20 (3) sponsoring industrial workshops, seminars,
21 training programs, extension courses, demonstrations,
22 and field visits designed to encourage the more effective
23 application of scientific and engineering information.

24 (b) “Designated agency” means the institution or agency

1 which has been designated as administrator of the program
2 for any State or States under section 3 or section 7 of this Act.

3 (c) "Qualified institution" means (1) an institution of
4 higher learning with a program leading to a degree in science,
5 engineering, or business administration which is accredited by
6 a nationally recognized accrediting agency or association
7 to be listed by the United States Commissioner of Education,
8 or such an institution which is listed separately after evalua-
9 tion by the United States Commissioner of Education pur-
10 suant to this subsection; or (2) a State agency or a private,
11 nonprofit institution which meets criteria of competence
12 established by the Secretary of Commerce and published in
13 the Federal Register. For the purpose of this subsection
14 the United States Commissioner of Education shall publish
15 a list of nationally recognized accrediting agencies or asso-
16 ciations which he determines to be reliable authority as to the
17 quality of science, engineering, or business education or train-
18 ing offered. When the Commissioner determines that there
19 is no nationally recognized accrediting agency or association
20 qualified to accredit such programs, he shall publish a list of
21 institutions he finds qualified after prior evaluation by an
22 advisory committee, composed of persons he determines to
23 be specially qualified to evaluate the training provided under
24 such programs.

25 (d) "Participating institution" means each qualified

1 institution in a State, which participates in the administra-
 2 tion or execution of the State technical services program as
 3 provided by this Act.

4 (e) "Secretary" means the Secretary of Commerce.

5 (f) "State" means one of the States of the United
 6 States, the District of Columbia, the Commonwealth of
 7 Puerto Rico, or the Virgin Islands.

8 (g) "Governor", in the case of the District of Columbia,
 9 means the Board of Commissioners of the District of
 10 Columbia.

11 SELECTION OF DESIGNATED AGENCY

12 SEC. 3. The Governor of any State which wishes to re-
 13 ceive Federal payments under this Act in support of its ex-
 14 isting or planned technical services program shall designate,
 15 under appropriate State laws and regulations, an institution
 16 or agency to administer and coordinate that program and to
 17 prepare and submit a plan and programs to the Secretary of
 18 Commerce for approval under this Act.

19 PLANS AND PROGRAMS

20 SEC. 4. The designated agency shall prepare and sub-
 21 mit to the Secretary in accordance with such regulations as he
 22 may publish—

23 (a) A five-year plan which may be revised annually and
 24 which shall: (1) outline the technological and economic con-
 25 ditions of the State, taking into account its region, business,

1 commerce, and its industrial potential and identify the major
 2 regional and industrial problems; (2) identify the general
 3 approaches and methods to be used in the solution of these
 4 problems and outline the means for measuring the impact of
 5 such assistance on the State or regional economy; and (3)
 6 explain the methods to be used in administering and coordi-
 7 nating the technical services program.

8 (b) An annual technical services program which shall
 9 (1) identify specific methods, which may include contracts,
 10 for accomplishing particular goals and outline the likely
 11 impact of these methods in terms of the five-year plan;
 12 (2) contain a detailed budget, together with procedures for
 13 adequate fiscal control, fund accounting, and auditing, to
 14 assure proper disbursement for funds paid to the State under
 15 this Act; and (3) indicate the specific responsibilities assigned
 16 to each participating institution in the State.

17 REVIEW OF PLANS AND PROGRAMS BY SECRETARY

18 SEC. 5. The Secretary shall not accept the five-year
 19 plan of a State for review and approval under this Act unless
 20 the Governor of the State or his designee determines and
 21 certifies that the plan is consistent with State policies and
 22 objectives; and the Secretary shall not accept an annual
 23 technical services program for review and approval under
 24 this Act unless the designated agency has, as certified thereto
 25 by the Governor or his designee—

1 (a) invited all qualified institutions in the State
2 to submit proposals for providing technical services
3 under the Act;

4 (b) coordinated its programs with other States and
5 with other publicly supported activities within the State,
6 as appropriate;

7 (c) established adequate rules to insure that no
8 officer or employee of the State, the designated agency,
9 or any participating institution, shall receive compensa-
10 tion for technical services he performs, for which funds
11 are provided under this Act, from sources other than his
12 employer, and shall not otherwise maintain any private
13 interest in conflict with his public responsibility;

14 (d) determined that matching funds will be avail-
15 able from State or other non-Federal sources;

16 (e) determined that such technical services program
17 does not provide a service which on the date of such cer-
18 tification is economically and readily available in such
19 State from private technical services, professional con-
20 sultants, or private institutions;

21 (f) planned no services specially related to a par-
22 ticular firm or company, public work, or other capital
23 project except insofar as the services are of general con-
24 cern to the industry and commerce of the community,
25 State, or region;

1 (g) provided for making public all reports pre-
2 pared in the course of furnishing technical services sup-
3 ported under this Act or for making them available at
4 cost to any person on request.

5 *APPROVAL BY SECRETARY*

6 *SEC. 6. The Secretary shall review the five-year plan*
7 *and each annual program submitted by a designated agency*
8 *under section 4 or section 7, and shall approve only those*
9 *which (1) bear the certification required by the Governor*
10 *or his designee under section 5; (2) comply with regulations*
11 *and meet criteria that the Secretary shall promulgate and*
12 *publish in the Federal Register; and (3) otherwise accom-*
13 *plish the purposes of this Act.*

14 *INTERSTATE PROGRAMS*

15 *SEC. 7. Two or more States may cooperate in adminis-*
16 *tering and coordinating their plans and programs supported*
17 *under this Act, in which event all or part of the sums author-*
18 *ized and payable under section 10 to all of the cooperating*
19 *States may be paid to the designated agency, participating*
20 *institutions, or persons authorized to receive them under the*
21 *terms of the agreement between the cooperating States. When*
22 *the cooperative agreement designates an interstate agency*
23 *to act on behalf of all of the cooperating States, it shall sub-*
24 *mit to the Secretary for review and approval under section 6*
25 *an interstate five-year plan and an annual interstate technical*

1 services program which, as nearly as practicable, shall meet
2 the requirements of section 4 and section 5.

3 *CONSENT OF CONGRESS*

4 *SEC. 8. (a) The consent of the Congress is given to any*
5 *two or more States to enter into agreements or compacts, not*
6 *in conflict with any law of the United States, for cooperative*
7 *efforts and mutual assistance and in designating agencies,*
8 *under section 7, for accomplishing the purposes of this Act.*

9 *(b) The right to alter, amend, or repeal this section,*
10 *or consent granted by this section, is expressly reserved.*

11 *ADVISORY COUNCIL*

12 *SEC. 9. Each designated agency shall appoint an ad-*
13 *visory council for technical services, the members of which*
14 *shall represent broad community interests and shall be quali-*
15 *fied to evaluate programs submitted under section 4. The*
16 *advisory council shall review each annual program, evaluate*
17 *its relation to the purposes of this Act, and report its findings*
18 *to the designated agency and the Governor or his designee.*
19 *Each report of each advisory council shall be available to the*
20 *Secretary on request. Members of any such advisory council*
21 *shall not be compensated for serving as such, but may be reim-*
22 *bursed for necessary expenses incurred by them in connection*
23 *with attending meetings of any advisory council of which*
24 *they are members.*

1 AUTHORIZATION OF APPROPRIATIONS AND PAYMENTS

2 SEC. 10. (a) There are authorized to be appropriated
3 for the purposes of this Act, \$10,000,000 for the fiscal year
4 ending June 30, 1966; \$20,000,000 for the fiscal year end-
5 ing June 30, 1967; \$30,000,000 for the fiscal year ending
6 June 30, 1968.

7 (b) From these amounts, the Secretary is authorized
8 to make an annual payment to each designated agency, par-
9 ticipating institution, or person authorized to receive pay-
10 ments in support of each approved technical services program.
11 Maximum amounts which may be paid to the States under
12 this subsection shall be fixed in accordance with regulations
13 which the Secretary shall promulgate and publish in the
14 Federal Register from time to time, considering (1) popula-
15 tion according to the last decennial census; (2) business,
16 commercial, industrial and economic development and pro-
17 ductive efficiency; and (3) technical resources.

18 (c) The Secretary may reserve an amount equal to
19 not more than 20 per centum of the total amount appro-
20 priated for each year under this section and is authorized to
21 make payments from such amount to any designated agency
22 or participating institution for technical services programs
23 which he determines have special merit or to any qualified
24 institution for additional programs which he determines are

1 necessary to accomplish the purposes of this Act, under cri-
2 teria and regulations that he shall promulgate and publish in
3 the Federal Register.

4 (d) An amount equal to not more than 5 per centum
5 of the total amount appropriated each year under this section
6 shall be available to the Secretary for the direct expenses
7 of administering this Act.

8 (e)(1) No amount paid for any technical services pro-
9 gram under subsection (b) or (c) shall exceed the amount of
10 non-Federal funds expended to carry out such program:
11 Provided, That the Secretary may pay an amount not to
12 exceed \$25,000 a year for each of the first three fiscal years
13 to each designated agency, other than a designated agency
14 under section 7; to assist in the preparation of the five-year
15 plan and the initial annual technical services programs, with-
16 out regard to any of the preceding requirements of this section.

17 (2) No funds appropriated pursuant to the provisions
18 of this section shall be paid to any designated agency, partic-
19 ipating institution, or person on account of any such agency
20 or institution, to carry out any technical services activity or
21 program in any State if such activity or program duplicates
22 any activity or program readily available in such State from
23 Federal or State agencies, including publicly supported in-
24 stitutions of higher learning in such State.

1 *ASSISTANCE BY THE SECRETARY*

2 *SEC. 11. The Secretary is authorized and directed to*
3 *aid designated agencies in carrying out their technical services*
4 *programs by providing reference services which a designated*
5 *agency may use to obtain scientific, technical, and engineering*
6 *information from sources outside the State or States which it*
7 *serves, for the purposes of this Act.*

8 *RULES AND REGULATIONS*

9 *SEC. 12. The Secretary is authorized to establish such*
10 *policies, standards, criteria, and procedures and to prescribe*
11 *such rules and regulations as he may deem necessary or*
12 *appropriate for the administration of this Act.*

13 *LIMITATIONS*

14 *SEC. 13. (a) Nothing contained in this Act shall be*
15 *construed as authorizing a department, agency, officer, or*
16 *employee of the United States to exercise any direction,*
17 *supervision, or control over, or impose any requirements or*
18 *conditions with respect to the personnel, curriculum, methods*
19 *of instruction, or administration of any educational in-*
20 *stitution.*

21 *(b) Nothing contained in this Act shall be deemed to*
22 *affect the functions or responsibilities under law of any other*
23 *department or agency of the United States.*

ANNUAL REPORT

1
2 *SEC. 14. (a) Each designated agency shall make an*
3 *annual report to the Secretary on or before the first day of*
4 *September of each year on the work accomplished under*
5 *the technical services program and the status of current*
6 *services, together with a detailed statement of the amounts*
7 *received under any of the provisions of this Act during the*
8 *preceding fiscal year, and of their disbursement.*

9 *(b) The Secretary shall make a complete report with*
10 *respect to the administration of this Act to the President and*
11 *the Congress not later than January 31 following the end of*
12 *each fiscal year for which amounts are appropriated pursuant*
13 *to this Act.*

EVALUATION

14
15 *SEC. 15. Within three years from the date of the en-*
16 *actment of this Act, the Secretary shall appoint a public com-*
17 *mittee, none of the members of which shall have been directly*
18 *concerned with the preparation of plans, administration of*
19 *programs or participation in programs under this Act. The*
20 *Committee shall evaluate the significance and impact of the*
21 *program under this Act and make recommendations concern-*
22 *ing the program. A report shall be transmitted to the Secre-*
23 *tary within sixty days after the end of such three-year period.*

TERMINATION

1
2 *SEC. 16. Whenever the Secretary, after reasonable*
3 *notice and opportunity for hearing to any designated agency*
4 *or participating institution receiving funds under this Act*
5 *finds that—*

6 *(a) the agency or institution is not complying sub-*
7 *stantially with provisions of this Act, with the regu-*
8 *lations promulgated by the Secretary, or with the ap-*
9 *proved annual technical services program; or*

10 *(b) any funds paid to the agency or institution*
11 *under the provisions of this Act have been lost, mis-*
12 *applied, or otherwise diverted from the purposes for*
13 *which they were paid or furnished—*

14 *the Secretary shall notify such agency or institution that no*
15 *further payments will be made under the provisions of this*
16 *Act until he is satisfied that there is substantial compliance*
17 *or the diversion has been corrected or, if compliance or cor-*
18 *rection is impossible, until such agency or institution repays*
19 *or arranges for the repayment of Federal funds which have*
20 *been diverted or improperly expended.*

REPAYMENT

21
22 *SEC. 17. Upon notice by the Secretary to any designated*
23 *agency or participating institution that no further payments*
24 *will be made pending substantial compliance, correction, or*
25 *repayment under section 16, any funds which may have been*

1 *paid to such agency or institution under this Act and which*
2 *are not expended by the agency or institution on the date of*
3 *such notice, shall be repaid to the Secretary and be deposited*
4 *to the account of the appropriations from which they*
5 *originally were paid.*

6 *RECORDS*

7 *SEC. 18. (a) Each recipient of a grant under this Act*
8 *shall keep such records as the Secretary shall prescribe,*
9 *including records which fully disclose the amount and the*
10 *disposition of such grant, the total cost of the related ap-*
11 *proved program, the amount and nature of the cost of the*
12 *program supplied by other sources; and such other records*
13 *as will facilitate an effective audit.*

14 *(b) The Secretary and the Comptroller General of the*
15 *United States, or any of their duly authorized representa-*
16 *tives, shall have access to any books, documents, papers, and*
17 *records of the recipient that are pertinent to amounts received*
18 *under this Act.*

19 *SHORT TITLE*

20 *SEC. 19. This Act may be cited as the "State Technical*
21 *Services Act of 1965".*

Amend the title so as to read: "A bill to promote commerce and encourage economic growth by supporting State and interstate programs to place the findings of science usefully in the hands of American enterprise."

89TH CONGRESS
1ST SESSION

H. R. 3420

[Report No. 817]

A BILL

To promote economic growth by supporting State and regional centers to place the findings of science usefully in the hands of American enterprise.

By Mr. HARRIS

JANUARY 25, 1965

Referred to the Committee on Interstate and Foreign Commerce

AUGUST 19, 1965

Reported with amendments, committed to the Committee of the Whole House on the State of the Union, and ordered to be printed

(House No. 111)

A BILL

TO

OF THE

HOUSE OF REPRESENTATIVES

IN SENATE

AND

COMMITTEE ON

EDUCATION

August 26, 1965

Farmers Home Administration:

Rural Housing Insurance Fund	\$100,000,000
Salaries and expenses (for administrative costs associated with the Rural Housing Insurance Fund)	4,000,000

Forest Service:

Forest Roads and Trails (Liquidation of Contract Authorization - for repair of damage caused by floods in the Northwest states)	<u>23,500,000</u>
Total	<u>\$130,271,000</u>

10. HOUSING. Received the conference report on H. R. 6927, to establish a Department of Housing and Urban Development (H. Rept. 884). pp. 21134-6, 21161
11. EDUCATION. Passed, 367 to 22, with amendments H. R. 9567, the proposed Higher Education Act of 1965 (pp. 21061-131, 21147). The bill provides for Federal aid to institutions of higher education to assist in seeking solutions to urban and suburban problems through college and university community service projects, and to improve library services, to provide assistance to needy students, etc., and provides for the establishment in the Office of Education of a National Advisory Committee on Community Service Programs, including a representative from this Department.
12. CONTRACTS; LABOR STANDARDS. The Education and Labor Committee voted to report (but did not actually report) H. R. 10238 (amended), to provide labor standards for certain persons employed by Federal contractors to furnish services to Federal agencies. p. D850
13. AIR POLLUTION. The Interstate and Foreign Commerce Committee voted to report (but did not actually report) S. 306 (amended), to amend the Clean Air Act to require standards for controlling the emission of pollutants from gasoline-powered or diesel-powered vehicles, and to establish a Federal Air Pollution Control Laboratory. p. D851
14. RESEARCH. The Rules Committee reported a resolution for consideration of H. R. 3420, to promote economic growth by supporting State and regional centers to place the findings of science usefully in the hands of American enterprise. p. 21161
15. TRANSPORTATION. The Rules Committee reported a resolution for the consideration of H. R. 5863, to authorize the Secretary of Commerce to undertake research and development in high-speed ground transportation. p. 21161
16. DATA PROCESSING. The Rules Committee reported a resolution for the consideration of H. R. 4845, to provide for the economic and efficient purchase, lease, maintenance, operation, and utilization of automatic data processing equipment by Federal departments and agencies. p. 21161
17. FARM LABOR. Rep. Cederberg again discussed the farm labor problems of the Mich. pickle farmers, and criticized statements made by Rep. Race as to the success or failure of the A-team program. pp. 21147-8

18. SCHOOL LUNCH; TURKEYS. Rep. Langen urged the use of turkeys in the school lunch program "to help stabilize the market for this commodity." p. 21150
19. PERSONNEL; PAY. Rep. Multer inserted his statement in support of a salary increase for Federal employees. pp. 21153-4
Received from the Labor Dept. proposed legislation entitled "Federal Employees' Compensation Act Amendments of 1965"; to Education and Labor Committee.
20. ADJOURNED until Mon. Aug. 20. p. 21160

ITEMS IN APPENDIX

21. LIBRARIES. Rep. Landrum inserted a speech entitled "The Changing Role of Libraries", discussing the concept of a national complex of library systems. pp. A4826-8
22. MILITARY CONSTRUCTION; VETO. Rep. Clevenger inserted a newspaper article supporting the President's veto of the military construction bill. p. A4829
23. FARM LABOR. Extension of remarks of Rep. Cederberg commending and inserting an article, "Teen Pickle Pickers Fail as Bracero Replacements" describing a shortage of farm labor from the Mich. cucumber harvest. pp. A4832-3
24. OPINION POLL. Extension of remarks of Rep. Davis, Wisc., inserting the results of his opinion poll. pp. A4835-6
25. TOBACCO. Rep. Boggs inserted an article describing a La. tobacco crop known as perique. p. A4836.
26. WATER. Rep. Davis, Wisc., inserted an article discussing the leading role of a Wisc. company in the research and development of water desalinization plants. pp. A4837-8
Rep. Brown of Calif. inserted an article commending administration actions to meet water shortages in the Northeast, yet urging private enterprise development of water supply systems. pp. A4846-7
27. FARM PROGRAM. Speech in the House by Rep. Philbin supporting the farm bill. pp. A4839-40
28. SUGAR. Extension of remarks of Rep. May objecting to statements made before the House Agriculture Committee by a lobbyist on behalf of the Association of Sugar Producers of Mexico that U. S. domestic sugar production should be reduced. pp. A4841-2
29. SOIL CONSERVATION. Rep. Laird inserted a Wis. Legislature joint resolution memorializing Congress to restore SCS funds for conservation technical assistance and for conservation and resource development works. p. A4851

BILLS INTRODUCED

30. RECREATION. S. 2460 by Sen. Ribicoff, to authorize the establishment of the Connecticut River National Parkway and Recreation Area, in the State of Connecticut, Massachusetts, Vermont, and New Hampshire; to Interior and Insular Affairs Committee. Remarks of author pp. 21172-3

CONSIDERATION OF H.R. 3420

AUGUST 26, 1965.—Referred to the House Calendar and ordered to be printed

Mr. DELANEY, from the Committee on Rules, submitted the following

R E P O R T

[To accompany H. Res. 548]

The Committee on Rules, having had under consideration House Resolution 548, report the same to the House with the recommendation that the resolution do pass.



House Calendar No. 151

89TH CONGRESS
1ST SESSION

H. RES. 548

[Report No. 885]

IN THE HOUSE OF REPRESENTATIVES

AUGUST 26, 1965

Mr. DELANEY, from the Committee on Rules, reported the following resolution;
which was referred to the House Calendar and ordered to be printed

RESOLUTION

1 *Resolved*, That upon the adoption of this resolution it
2 shall be in order to move that the House resolve itself into
3 the Committee of the Whole House on the State of the
4 Union for the consideration of the bill (H.R. 3420) to pro-
5 mote economic growth by supporting State and regional
6 centers to place the findings of science usefully in the hands
7 of American enterprise. After general debate, which shall
8 be confined to the bill and shall continue not to exceed two
9 hours, to be equally divided and controlled by the chairman
10 and ranking minority member of the Committee on Inter-
11 state and Foreign Commerce, the bill shall be read for amend-
12 ment under the five-minute rule. It shall be in order to

1 consider the substitute amendment recommended by the
2 Committee on Interstate and Foreign Commerce now in the
3 bill and such substitute for the purpose of amendment shall
4 be considered under the five-minute rule as an original bill.
5 At the conclusion of such consideration the Committee shall
6 rise and report the bill to the House with such amendments
7 as may have been adopted, and any member may demand
8 a separate vote in the House on any of the amendments
9 adopted in the Committee of the Whole to the bill or com-
10 mittee substitute. The previous question shall be considered
11 as ordered on the bill and amendments thereto to final
12 passage without intervening motion except one motion to
13 recommit with or without instructions.

89TH CONGRESS
1ST SESSION

H. RES. 548

[Report No. 885]

RESOLUTION

Providing for consideration of H.R. 3420, a bill to promote economic growth by supporting State and regional centers to place the findings of science usefully in the hands of American enterprise.

By Mr. DELANEY

AUGUST 26, 1965

Referred to the House Calendar and ordered to be printed

RESOLUTION

Whereas the _____

DIGEST of Congressional Proceedings

OF INTEREST TO THE DEPARTMENT OF AGRICULTURE

UNITED STATES DEPARTMENT OF AGRICULTURE
WASHINGTON, D. C. 20250
OFFICIAL BUSINESS

POSTAGE AND FEES PAID
U. S. DEPARTMENT OF AGRICULTURE

OFFICE OF BUDGET AND FINANCE
FOR INFORMATION ONLY;
(NOT TO BE QUOTED OR CITED)

Issued Sept. 2, 1965
For actions of Sept. 1, 1965
89th-1st; No. 161

CONTENTS

Accounting.....	36	Foreign trade.....	11,23,37	Recreation.....	29,39
Appropriations.....	38	Legislative		Reports.....	36
Beef prices.....	39	accomplishments.....	12	Research.....	3
Committee assignments...	17	Legislative process.....	26	Retirement.....	34
Contracts.....	5	Loans.....	2	Science.....	3
Dairy.....	15	Monopolies.....	35	Stockpiling.....	6
Data processing.....	16,26	Natural resources.....	24	Supergrades.....	19
Education.....	13,18	Nomination.....	20	Transportation.....	27,33
Farm labor.....	31	Opinion poll.....	15,25	Water pollution.....	30
Farm program.....	25	Personnel.....	14,19,34	Water resources.....	30,32
Federal expenditures....	22	Political activity.....	14	Water systems.....	2,15
FHA loans.....	2	Poverty.....	8,28	Watersheds.....	21
Foreign agriculture.....	10	Procurement.....	5	Wheat.....	1,15,23
Foreign service.....	4	Public works.....	7	Wilderness.....	29

HIGHLIGHTS: House Rules Committee cleared bill to extend International Wheat Agreement Act and deferred action on bill to expand various FHA loan authorities. Rep. Battin criticized increase in retail prices of beef. Rep. Betts introduced and discussed bill to require GAO approval of accounting systems.

HOUSE

1. **WHEAT.** The Rules Committee reported a resolution for consideration of S. 2294, to extend the operation of the International Wheat Agreement Act until July 31, 1966. p. 21656

2. **LOANS.** The Rules Committee deferred action on granting a rule on H. R. 10232, the FHA loan expansion bill (p. 1874). As reported by the Agriculture Committee this bill includes provisions as follows:

Authorizes the Secretary of Agriculture to make or insure loans to associations, including corporations not operated for profit, and public and quasi-public agencies to provide for, in addition to present authority, the installation or improvement of facilities for the use and control of water, including

central water systems, and the installation or improvement of drainage or waste disposal facilities, primarily designed to serve farmers, ranchers, farm tenants, farm laborers, and other rural residents. Authorizes the Secretary to make grants aggregating not to exceed \$50 million in any fiscal year to these agencies and associations to assist in financing specific projects for the development, storage, treatment, purification, or distribution of water or the collection, treatment, or disposal of waste in rural areas (grants may not exceed 50 percent of the development cost of the project). Provides that no loan or grant shall be made which will cause the unpaid principal indebtedness of any association to exceed \$4 million at any one time.

Authorizes the Secretary to make grants aggregating not to exceed \$5 million in any fiscal year to public bodies or other such agencies to prepare comprehensive plans for the development of water or sewer systems in rural areas which do not have funds available for immediate undertaking of the preparation of such plans.

Increases from \$200 million to \$450 million the limit on FHA insured loans in any one year; repeals present provisions prohibiting agreements by the Secretary to purchase such insured loans in less than 3 years from the date of the note; permits the Secretary to fix the insurance charge retained by him from borrowers' payments and the portion of such charge deposited in the insurance fund; and increases the amount of loans made from the insurance fund which the Secretary can hold at any one time for future sale from \$25 million to \$50 million.

3. RESEARCH. Passed with amendment S. 949, to authorize the Department of Commerce to institute a 3-year program of matching grants to States in a cooperative effort to disseminate the findings of science and technology throughout American business, commerce, and industrial establishments as a means of promoting industrial and economic growth, after substituting the language of a similar bill, H. R. 3420, which was passed earlier as reported. H. R. 3420 was tabled. pp. 21657-72
4. FOREIGN SERVICE. The Rules Committee reported a resolution for consideration of H. R. 6277, to amend the Foreign Service Act so as to establish a single personnel system within the Department of State, U. S. Information Agency, and Agency for International Development. pp. 21656-7
5. PROCUREMENT; CONTRACTS. The Education and Labor Committee reported with amendment H. R. 10238, to provide labor standards for certain persons employed by Federal contractors to furnish services to Federal agencies (H. Rept. 948). p. 21724
6. STOCKPILING. A subcommittee of the Armed Services Committee voted to report to the full committee H. R. 6852, with amendment, to authorize disposal of approximately 47 million pounds of abaca from the national stockpile; H. R. 10516, to authorize disposal of vegetable tannin extracts from the national stockpile; H. R. 10714, to authorize disposal of colemanite from the supplemental stockpile; and H. R. 10715, to authorize disposal of chemical grade chronite from the supplemental stockpile. p. D872
7. PUBLIC WORKS. The Public Works Committee voted to report (but did not actually report) with amendment S. 2300, to authorize the constructions, repair, and preservation of certain public works on rivers and harbors for navigation and flood control. p. D873

bill and amendments thereto to final passage without intervening motion except one motion to recommit.

CORRECTION OF THE RECORD

Mr. HALL. Mr. Speaker, I ask unanimous consent that my statement printed on page 21300 of the CONGRESSIONAL RECORD be printed in the permanent RECORD to follow the substitute amendment offered by the gentleman from New Jersey [Mr. FRELINGHUYSEN].

The SPEAKER. Is there objection to the request of the gentleman from Missouri?

There was no objection.

CORRECTION OF ROLL CALL

Mr. ASHLEY. Mr. Speaker, on roll call No. 253 I am not recorded. I was present and voted "yea." I ask unanimous consent that the permanent RECORD and Journal be corrected accordingly.

The SPEAKER. Without objection, it is so ordered.

There was no objection.

STATE TECHNICAL SERVICES ACT OF 1965

Mr. DELANEY. Mr. Speaker, by direction of the Committee on Rules, I call up House Resolution 548 and ask for its immediate consideration.

The Clerk read as follows:

H. RES. 548

Resolved, That upon the adoption of this resolution it shall be in order to move that the House resolve itself into the Committee of the Whole House on the State of the Union for the consideration of the bill (H.R. 3420) to promote economic growth by supporting State and regional centers to place the findings of science usefully in the hands of American enterprise. After general debate, which shall be confined to the bill and shall continue not to exceed two hours, to be equally divided and controlled by the chairman and ranking minority member of the Committee on Interstate and Foreign Commerce, the bill shall be read for amendment under the five-minute rule. It shall be in order to consider the substitute amendment recommended by the Committee on Interstate and Foreign Commerce now in the bill and such substitute for the purpose of amendment shall be considered under the five-minute rule as an original bill. At the conclusion of such consideration the Committee shall rise and report the bill to the House with such amendments as may have been adopted, and any member may demand a separate vote in the House on any of the amendments adopted in the Committee of the Whole to the bill or committee substitute. The previous question shall be considered as ordered on the bill and amendments thereto to final passage without intervening motion except one motion to recommit with or without instructions.

Mr. DELANEY. Mr. Speaker, I yield 30 minutes to the gentleman from Nebraska [Mr. MARTIN] and pending that yield myself such time as I may consume.

Mr. Speaker, House Resolution 548 provides for consideration of H.R. 3420, a bill to promote economic growth by supporting State and regional centers to place the findings of science usefully in the hands of American enterprise. The

resolution provides an open rule with 2 hours of general debate, making it in order to consider the committee substitute as an original bill for the purpose of amendment.

H.R. 3420 would authorize a 3-year program of matching Federal grants to the States in a cooperative effort to disseminate the findings of science and technology throughout American business, commerce, and industry. The purpose of the proposed legislation is to speed industrial and economic growth of the States and the country through an improved application of technical and scientific knowledge. The achievement of an improved application of technical and scientific knowledge under this program and with the cooperation of universities, communities, and industries will to three objectives: First, strengthening the Nation's economy by upgrading industries through the utilization of advanced technology, thereby generally expanding the industrial base; second, increasing employment by facilitating industrial use of technology and the manufacturing of new products which result; and third, enhancing the competitive position of U.S. products in world markets.

The emphasis of the proposed legislation is on State participation in technical services programs, planned locally, and designed specifically to place findings of science and technology into the hands of local businesses and industries.

Mr. Speaker, I urge the adoption of House Resolution 548.

Mr. MARTIN of Nebraska. Mr. Speaker, I yield myself such time as I may consume.

(Mr. MARTIN of Nebraska asked and was given permission to revise and extend his remarks.)

Mr. MARTIN of Nebraska. Mr. Speaker, as the able gentleman from New York has explained, House Resolution 548 provides for the consideration of H.R. 3420 under an open rule with 2 hours of debate. The committee substitute is made in order as an original bill for the purpose of amendment under the rule.

Mr. Speaker, none can quarrel with the stated purpose of H.R. 3420, to make available, essentially to small businesses, commerce, and industry, applied technical and scientific knowledge. The reported bill authorizes a 3-year program of matching Federal grants to the States in a cooperative effort to strengthen our economy, increase employment, and improve our competitive position in world markets.

To qualify for Federal matching funds a State must designate an agency responsible for the administration of its program. Such agency must then prepare a 5-year plan outlining how a technical services program could be used. The sum of \$25,000 a year in Federal funds for the first 3 years on a nonmatching basis can be made available to any State to assist in the plan preparation. All qualified institutions of higher learning are to submit proposals for consideration of inclusion in the State plan, which is to outline a budget and assign responsibilities to schools participating. The

Secretary of Commerce must approve submitted plans, based on reasonable criteria, and make funds available directly to the States. He has authority to fix maximum amounts based on population, industrial and economic development, and the technical resources and productive efficiency available within a State. He has informed the Committee on Interstate and Foreign Commerce that the smaller States may receive up to \$150,000 annually and the largest up to \$2 million. None can receive more.

The program has a life of 3 years and authorizations for fiscal 1966 of \$10 million, of \$20 million for 1967, and of \$30 million for 1968.

Additional views are signed by seven Members. They approve the purpose of the bill and generally support it but are worried by the lack of matching funds in the planning stages of the program. They fear this may tend to place the States in a secondary position during the planning period.

They also believe that before the program moves to the implementation stage a more careful assessment of State and regional needs must be made, and provisions made for active participation and cooperation with Federal programs now in existence; that is, Commerce Clearinghouse for Scientific and Technical Information and the Presidential Commission on Automation and Economic Progress among many, along with non-Federal efforts such as those of MIT and some 28 existing State university programs.

The program must be extended or die after 3 years, giving Congress a chance to assess its value and correct any difficulties. Moneys must be appropriated each year and a ceiling is fixed.

Mr. Speaker, I know of no opposition to the rule and urge its adoption.

Mr. DELANEY. Mr. Speaker, I move the previous question on the resolution. The previous question was ordered.

The SPEAKER. The question is on the resolution.

The resolution was agreed to.

IN THE COMMITTEE OF THE WHOLE

Mr. HARRIS. Mr. Speaker, I move that the House resolve itself into the Committee of the Whole House on the State of the Union for the consideration of the bill (H.R. 3420) to promote economic growth by supporting State and regional centers to place the findings of science usefully in the hands of American enterprise.

The motion was agreed to.

Accordingly, the House resolved itself into the Committee of the Whole House on the State of the Union for the consideration of the bill H.R. 3420, with Mr. RODINO in the chair.

The Clerk read the title of the bill.

By unanimous consent, the first reading of the bill was dispensed with.

Mr. HARRIS. Mr. Chairman, I yield myself such time as I may require.

Mr. Chairman, I am very happy, with other members of the Committee on Interstate and Foreign Commerce, to bring this bill, H.R. 3420, to the attention of the House, and to urge favorable consideration of it.

In my judgment this is one of the most important bills that we have

brought to the House for its consideration.

Our entire future, as well as our past, depends on the strength of the economy and the economic growth of our country. This bill has for its purpose the strengthening of our economy, and it will give us opportunities for greater economic growth in order that we can improve under our system of free enterprise.

This bill was brought to us from the Department of Commerce. It is sponsored by the administration; it is considered to be one of the facets of our program to make a well-rounded approach to the problems that we are daily encountering.

The subcommittee held rather extensive hearings. The subcommittee was chaired by the gentleman from Massachusetts [Mr. MACDONALD]. The committee did an excellent job with the hearings, and in working out the bill in order to make it the kind of a program we were told was desired. I think it would be fair to say that as the bill came to us it was rather loosely drawn, if I might use that term.

We had some difficulties in analyzing it to determine just what would be accomplished under it. But after a full explanation and development during the course of the hearings of the program to be implemented, the subcommittee then proceeded to work out a good, practical, and sound bill to accomplish the purposes desired.

I would like to compliment the subcommittee highly for the very fine work it has performed and for bringing to the Committee on Interstate and Foreign Commerce and thus to the House what I consider to be a very fine bill.

At this time, Mr. Chairman, I would like to yield to the gentleman from Massachusetts [Mr. MACDONALD], chairman of the subcommittee who labored along with the other members of that committee and who did such a magnificent job in presenting here a program that I believe, after it is fully explained, will be overwhelmingly accepted by the House.

Mr. Chairman, I now yield to the gentleman from Massachusetts [Mr. MACDONALD] 15 minutes.

(Mr. MACDONALD asked and was given permission to revise and extend his remarks.)

Mr. MACDONALD. Mr. Chairman, H.R. 3420 which is now before the House for consideration is a broad and imaginative program which can be used to promote economic growth and increase employment throughout the United States. In addition to these two vital purposes, the bill has as its third major goal the improvement of the competitive position of U.S. products throughout the world.

As originally introduced, the bill called for the establishment of technical service programs whereby each State would have been able to organize programs primarily through land grant institutions and receive matching funds from the Federal Government without any fixed limitation as to the time such programs could run, and without any identified

sum as a maximum authorization on the part of the Congress. The Subcommittee on Commerce and Finance and later the full House Committee on Interstate and Foreign Commerce, in public and executive sessions, took a very close and careful look at these and the other provisions of the bill as originally sponsored by the Department of Commerce and the administration. I believe, and my belief is supported by the report and the hearings on this bill, that the substitute amendment which I wholeheartedly endorse here today, is a much more desirable bill than the one which was originally introduced.

The committee amendment should go a long way to meet the commendable purposes of the original bill, but it does not suffer from the failure to include limitations and reasonable controls which was a considerable problem when we first had the bill under committee consideration.

Before outlining for you the manner in which we amended and tightened the original bill, let me first describe in some detail just how the State technical services programs will operate.

A State which is to participate in the program will, through its Governor, designate an agency to administer the program. This agency may be a component of the State government or a State university, a land-grant college or any other appropriate agency. This designated agency will prepare a plan which will describe the technical and economic situation in the particular State. It will also describe the State's business and industrial problems and the means proposed to assist in the solution of such problems. The designated agency will prepare an annual technical services program which will cover the objectives for the first year. It will set up a budget and the responsibilities which are to be assigned to each qualified institution which is to participate in the program. The qualified institutions in turn are defined as those of higher learning with a program leading to a degree in science, engineering, or business administration. These schools must be accredited by a nationally recognized accrediting agency or association which will be listed by the U.S. Commissioner of Education.

A second form of qualified institution is a State agency or a nonprofit institution which meets criteria of competence established by the Secretary of Commerce.

Each State will have but one designated agency. However, as you can see from the description which I have just given as to qualified institutions, each State may have many such institutions.

Every qualified institution within a State must be invited to submit a proposal for that State's technical services program. This does not mean, of course, that every qualified institution will be a participant but it does mean that each such institution can have a voice in the creation and execution of the State programs.

When the Governor of a State which has a program submits the annual program and the State's overall plan to the Secretary of Commerce, the Secretary

will be required to review the plan, and where it is found to comply with the regulations and criteria set by the Secretary and to otherwise accomplish the purposes of the act, the plan will be approved.

Once in operation, there is a wide variety of technical services which might be offered by the various institutions participating in the program within a particular State. For example, a program oriented to the needs and problems of a specific industry dominant in one State might offer workshops, seminars, and demonstrations in order to bring existing technology to local business and industry interests for use in plants within the State. A technology dissemination and referral center could offer two types of services: First, technical reports, abstracts, bibliographies, reviews, microfilm, computer tapes and the like; and second, referral to sources of scientific and engineering expertise in the fields of interest to the local industry. These examples by no means exhaust the list of possible technical services that might be offered in any State program. The range of services can be as wide as the range of industrial and technological interests in this country.

There is also a provision for programs which may be administered, coordinated, and executed by two or more States. Similar procedures for approval of these interstate or multistate programs are provided for.

Contrary to the request and arguments of the Department of Commerce we have cut the Federal authorization back from a 5-year program to a 3-year program. Section 10 now provides for \$10 million for the first fiscal year, \$20 million for the second fiscal year, and \$30 million for the third fiscal year. The Department had sought a fourth and fifth year, each at a \$40 million level.

The Secretary of Commerce will be authorized to make an annual payment to each designated agency, participating institution, or person authorized to receive payments in support of each approved technical services program. Maximum amounts will be fixed, and population, business, commercial, industrial, and economic development, and productive efficiency, as well as the individual State's technical resources will be used as criteria in the formulation of regulations.

We have been advised by the Department and it is part of the report—page 23—that the least populous State may receive an annual amount up to \$150,000, and that the most populous State will not receive an annual amount exceeding \$2 million. From the total amounts available, there is a provision, section 10, which would allow the Secretary to reserve up to 20 percent each year, and to make payments from this 20 percent reserve to any designated agency or participating institution for technical services programs which the Secretary determines have special merit, or he may within the limits of this reserve, make payments to any qualified institution for additional program which the Secretary determines are necessary to accomplish the purposes of this act.

The direct expenses of administering the act are limited to not more than 5 percent of the appropriated amount for each year.

In order to assist in the creation of technical services programs, the Secretary may pay an amount up to \$25,000 for each of the first 3 fiscal years to each designated State agency. These are the only funds which are to be authorized on a nonmatching fund basis. Apart from this "start up" or "seed" money, all Federal funds will have to be matched at least dollar for dollar by State or other non-Federal funds.

The committee in section 5(e) and section 10(2) included language which would prohibit competition with private enterprise and duplication of similar activities or programs which are readily available in particular States.

And we deleted section 11(e) of the bill as introduced. This provision would have made available to the Secretary of Commerce as additions to the 20-percent reserve for special programs all amounts appropriated for payments to the States which were not obligated at the end of the fiscal year for which appropriated. These additions to the reserve would have been available until expended. By deletion of this provision, any amounts appropriated for payment to the States but not obligated will revert to the Treasury.

In section 14 and section 15 we have added requirements which call for annual reports and which provide for a complete evaluation after a 3-year period.

With these significant changes that I have discussed, it is my opinion that this Federal-State program should be undertaken. Through these means, business and industries will have a new and important pipeline of commercial information. This can serve as a vital stimulus particularly to the smaller and less sophisticated businesses and industries.

We have provided the necessary protections to see that the program does not get out of hand and we have called for a complete review after a 3-year experimental period. Under these circumstances, I strenuously urge the passage of H.R. 3420.

Mr. MONAGAN. Mr. Chairman, will the gentleman yield?

Mr. MACDONALD. I am happy to yield to the gentleman from Connecticut.

Mr. MONAGAN. Would this apply to an existing organization as well as to one which would be formed after this legislation goes into effect?

Mr. MACDONALD. In the case of Connecticut, if the State of Connecticut were to do this, any college or institution in the State which gives a degree of bachelor of science, a degree in business administration, or a degree in engineering, would qualify.

Mr. MONAGAN. Even though it is in existence at the present time?

Mr. MACDONALD. We are looking forward to the fact that they will use existing facilities.

Mr. MONAGAN. I thank the gentleman.

Mr. WYDLER. Mr. Chairman, will the gentleman yield?

Mr. MACDONALD. I am happy to yield to the gentleman from New York.

Mr. WYDLER. Could the gentleman inform me what information these centers would disseminate?

Mr. MACDONALD. The information to be disseminated would be the information that is sought in the plan adopted by the agency in the various States. The States themselves, not the Federal Government or the Department of Commerce, will determine in which areas they feel the money which will be spent and the information which will be gathered should be concentrated. In the gentleman's home State, they might seek a plan for one industry.

In my home State and in my home region perhaps they would go into the modern methods of fisheries, and so forth. Therefore, when somebody in the fishing business wanted to know some of the problems that have been tackled and overcome by the fishermen in Oregon or the fishermen in Florida, then this information would be made available to them and they would save themselves money by being able to take advantage of the technological improvements that have been worked out in other regions or other States.

Mr. WYDLER. If the gentleman will explain, where would the school or the agency get the information that they were going to disseminate?

Mr. MACDONALD. I tried to explain to the gentleman, and if he will follow this, I will state it again.

Let us say in the State of Massachusetts the Governor decided that the agency he wanted to perform this function of gathering information would be the University of Massachusetts rather than MIT.

The CHAIRMAN. The time of the gentleman has expired.

Mr. STAGGERS. Mr. Chairman, I yield the gentleman 4 additional minutes.

Mr. MACDONALD. The reason why I asked for this additional time is I think it goes directly to the heart of the problem that at first baffled some of the people on our subcommittee.

The Governor designates the Massachusetts Institute of Technology, as his agency to formulate a plan which would be sent to the Secretary of Commerce. In the doing the people from MIT would get together with the people from other colleges and universities or technological people and decide what is the greatest interest economically for Massachusetts. They may decide to investigate and correlate the information on all of the methods that have gone into being not necessarily in Massachusetts but any place in the country as to new methods of fishing. Now, it is up to the Governor and his agency to determine what information they are going to correlate.

Mr. WYDLER. I follow the gentleman on that, but what I do not follow is this: When they have decided that they want to get information on fishing so that they can disseminate it to someone who wants that information, where do they get that information on fishing from?

Mr. MACDONALD. After they submit their plan to the Secretary of Commerce there is a clearinghouse, or there will be a clearinghouse, here in Washington, D.C., in the Department of Commerce, which will serve as a clearinghouse for information coming in on all of these subjects. This would be done, I imagine, in a computer-type fashion. The information about fisheries would come in and, would be filed under that subject, under the letter "F" in the alphabet, and when called upon they will furnish this information to the State agency.

Mr. WYDLER. If the gentleman will try to follow me, that is exactly what I thought you were describing. It appears to me all we are doing with this bill is setting up another place to keep the same information that is already available to people who want information on fisheries or any other matter. What does this bill do that is not done already?

Mr. MACDONALD. If the gentleman will permit me to answer him, I can just point out to the gentleman that he could not be more wrong. There is a section in the bill—and I do not have it here before me, I think section e-2—which specifically prohibits this duplication of information or effort.

Mr. WYDLER. But you just described the fact that when you have one of these agencies operating they will write to Washington and say, "Send us the information you now have so we can send it to somebody else." That is just exactly the situation you described.

Mr. MACDONALD. That is correct, because it is done not on a State basis but on a regional basis. If the gentleman will try to understand, I am sure he can. The problems which beset the fishing industry in Massachusetts are also common to the fishing industry in Florida or on the west coast. If the plan that is submitted by the Massachusetts people is accepted and it is acceptable that they shall go into the problems of fishing in Massachusetts, then they go to the fishing industry in Massachusetts. When they have collated the information they have gathered from Massachusetts, as a byproduct they send the information to Washington where it is made available to anybody who has a similar problem. It does not seem to me to be a very difficult thing to understand.

Mr. WYDLER. It is not difficult to understand. It is difficult to understand the reason for it.

Mr. SPRINGER. Mr. Chairman, I yield myself such time as I may consume.

Mr. Chairman, no one could object to the lofty aims of the State technical services bill. I agree with and support the stated purpose, which is "to promote economic growth and support State and regional technical service centers which will make available a wide variety of scientific and technical knowledge to American business, enterprise, commerce, and industry."

All of us realize the serious need for a solution to the problems of disseminating information from the wealth of scientific and technical knowledge available. We can sympathize with the prob-

lems of technical people and management in keeping abreast of day-to-day advances in science and technology. Although this bill will neither solve all of the problems nor meet all of the needs of the States most lacking in ability to put such scientific knowledge to the best use, it will be an important step in the right direction.

Although I originally objected to the vagueness of the bill, I think the wording now tightens it up considerably. For example, the first draft failed to provide for an annual review. The Committee on Interstate and Foreign Commerce inserted a provision for an annual review, and I am satisfied that the program will be monitored satisfactorily.

I can appreciate the dilemma the Department of Commerce faces in proposing a Federal-State program. It is the same dilemma the Congress faces in trying to assure that control remains in State and local hands when up to half the funds are Federal in origin. For example, I would favor more detailed assessment of the definite needs of the individual States and/or regions for the technical services authorized in this legislation. Yet the determination of the problems a State or region faces must be left in the hands of a designated agency, selected by the Governor to develop plans and programs for the State. In our annual reviews, the Congress must weigh the needs and judge whether the programs are directed toward substantive problems.

One of the possibilities which I shall be on the lookout for is unnecessary duplication of existing private and/or institutional programs already successfully furnishing technical services to business and industry. Many universities make technical information available for a fee, as in the Associates Plan of Massachusetts Institute of Technology. Nonprofit organizations, such as Stanford Research Institute and Midwest Research Institute, offer the results of their research and development programs in various seminars, publications, and reports. We have a right to be concerned that we not simply duplicate some or all of this activity.

Having pointed out those cautions, let me conclude by stating that my original cautions have been heeded, and I favor the bill. Properly administered, the State technical services program can contribute greatly to the increased efficiency of the industrial sector of our economy. Proper administration will be in the hands of the Secretary of Commerce. It will require careful attention by him to the spirit as well as the mechanics embodied in the State plans approved by him. I would encourage the Secretary to extend every effort toward consolidation of Government activities in the field of technical services. The Congress will give a searching look at the first report to Congress required under section 14 of the bill.

Mr. HARRIS. Mr. Chairman, will the gentleman yield?

Mr. SPRINGER. I yield.

Mr. HARRIS. I think perhaps it should be said in that respect that the Farm Extension Service, as the gentle-

man has pointed out, is a joint Federal-State office, so to speak. It has technical information available to it which it disseminates to the farmers for their use. This program, to state it succinctly and briefly, would provide a State agency, or someone designated by the Governor—I will put it that way so that it can be understood more easily—which coordinates the information within the States. It obtains the technical and scientific information from the more advanced and more successful businesses, as well as from research and other places, and assembles it in order that it may be distributed to the smaller businesses who do not have the benefit of it.

Mr. SPRINGER. May I say in reply to my distinguished chairman, it is my understanding that in this very highly competitive age, when engineers come out of college, say at the end of a 10-year period, an engineer should go back to college for 2 years to refresh his knowledge of his particular field.

Now, a portion of what is in this bill is an attempt to keep that engineer in that industry, whatever it is, up to date on what is happening in his particular field or in the particular kind of a concern with which he is connected. If he keeps in touch with this and keeps up to date he should not have to go back to the university to find out what advancements have been taking place, but should be able to do this on a rather current basis through the provisions of this bill.

Mr. HUTCHINSON. Mr. Chairman, will the gentleman yield?

Mr. SPRINGER. I yield to the gentleman from Michigan.

Mr. HUTCHINSON. We are talking about small businesses.

A spirit of competition exists among small businesses. If you are going to send a college professor or a college engineer or somebody from a State agency around from business to business, how much real information do you suppose he is going to be able to garner from the businessman who really is not particularly interested in divulging his techniques and his ways of doing things to his competitors?

Mr. SPRINGER. I do not believe we anticipate that we are going to ask anybody for any information, say, in your State, but we are going to compile a tremendous amount of scientific information which is available every place but it has not been brought together at a place where industry can consult with someone else about what is available. He might not even know where it is. That is more or less the purpose of this bill. If it were in your State of Michigan your people in small industry would have a place or someone to whom they could go to find out the situation with reference to, for instance, industry problems and where he can improve his situation competitively by using the latest techniques.

Mr. HUTCHINSON. Mr. Chairman, if the gentleman will yield further, these procedures and techniques that would be divulged to him would be the procedures and techniques which have been worked out in the professional community rather than in the business community.

Mr. SPRINGER. I think you cannot forever keep those techniques a secret, except perhaps in the drug industry, you might, but not in the industrial field. This information would be open to the public. Under this program all of this information would be open to the public. The purpose of the State agency is to get these things or this information to the points where they would be needed in that State or accumulate them, we will say, at either the University of Michigan as in your State; whereas, in some other State such as Massachusetts, they might have an entirely different problem. But they would accumulate in Michigan a catalog of all the things that would affect industry in Michigan.

Mr. HUTCHINSON. We have trade associations such as the hardware people have an association, by way of illustration, and they have conventions. It has been my understanding that in those get-togethers, people interested in that business are able to pick up other information from people similarly engaged.

Mr. SPRINGER. I would say that is true, but this goes much deeper than that. For instance, there would be gathered together all of the information for the last 10 years in the hardware business and it would be put together at a place where one engaged in that business could go and find it under a catalog, and you would have the advice of the person at that location who could get this information out and who would have it in his hand and who could explain it.

I do not anticipate that this will be of much service to large firms. Large firms such as General Motors or United States Steel or the Caterpillar company or Allis-Chalmers, I do not believe this would fit that kind of business, but it would fit the smaller businesses and I think it could be of considerable service to them.

Mr. HUTCHINSON. I thank the gentleman from Illinois for his explanation, but there are still doubts in my mind.

Mr. SPRINGER. This is not an easy bill to explain. It took us many hours and several days of executive meetings and discussions of it to come to a clear understanding of whether or not we felt the bill would have enough in it that it should be brought to the floor of the House.

(Mr. SPRINGER asked and was given permission to revise and extend his remarks.)

Mr. SPRINGER. Mr. Chairman, I yield 10 minutes to the gentleman from Massachusetts [Mr. KEITH].

(Mr. KEITH asked and was given permission to revise and extend his remarks.)

Mr. KEITH. Mr. Chairman, it is true, as my colleague from Massachusetts and my chairman, the gentleman from Arkansas, have said, that we have worked long and hard on this bill in an effort to bring to the floor of the House a measure that will truly contribute to the dynamic growth of our country, and particularly, to the share in that growth, of small business, industries and commerce in our several States.

There have been one or two questions raised which I hope to be able to shed

some light on. In the first place, it has been said that this is a 3-year program. Actually, it is a 5-year program, but we take a look at it after 3 years. The programs that are to be developed within the States are to be 5 years in length, and must meet with approval in order to obtain the matching funds of the Secretary of Commerce. The eventual scope of the program is \$40 million a year. So we are not talking about \$60 million—we are talking about an annual expenditure of at least \$40 million, and if we live up to our history in this respect the program will probably be expanded in years to come.

The gentleman from Connecticut asked a question of my chairman as to the ability of the State of Connecticut to participate in this program. I believe that the State of Connecticut has such a program underway, which is probably under the Department of Commerce; is that correct?

Mr. MONAGAN. There is a program that is underway. I am not sure which State department has jurisdiction.

Mr. KEITH. The Department of Commerce could be designated the agency for the formulation of the program, but the qualified institutions which participate in the program itself will largely be in the educational field.

They could be directed by an agency of the State government, and it could either be a land-grant college or some other educational institution that has been approved for that purpose, or any other State agency as described on page 17 of the bill, which says:

SELECTION OF DESIGNATED AGENCY

SEC. 3. The Governor of any State which wishes to receive Federal payments under this Act in support of its existing or planned technical services program shall designate, under appropriate State laws and regulations, an institution or agency to administer and coordinate that program and to prepare and submit a plan and programs to the Secretary of Commerce for approval under this Act.

The Governor then selects an institution to coordinate the program and to prepare and submit a plan to the Secretary of Commerce for approval under this act. I believe the Department of Commerce could qualify as the designated agency in that respect.

As was indicated earlier, the maximum amount a State could receive in this program would be \$25,000. That is \$25,000 a year for each year, or \$75,000 for 3 years, that a State could get grants without any matching requirements on the part of the State for planning purposes. It is my intention to offer an amendment to make these matching fund requirements a part of the planning phase as well as the operational phase.

The gentleman from New York asked a question concerning duplication. I believe he had in mind duplication on the selection and dissemination of scientific material. The response was made from the floor that the fishing industry was a good illustration of the kind of services that could be rendered by the proposed regional technical service center. I posed this question of Mr. Hollomon, and he responded with the fishing industry.

So I called on the Bureau of Commercial Fisheries which certainly is more qualified to estimate and understand the problems of the fishing industry and about the nature of their services and I found literally there were dozens of services that they rendered to those who are interested in the fishing industry in addition to those concerned with the actual catching of the fish.

I list here for the RECORD some of those services which are already available to the several States through the Department of the Interior, Bureau of Commercial Fisheries:

TECHNICAL SERVICES TO INDUSTRY PROVIDED BY THE BUREAU OF COMMERCIAL FISHERIES

1. The Bureau of Commercial Fisheries publishes daily—in seven different cities—a fisheries market news report with a free distribution of 10,000. It is sent to fishermen, fish processors, and banks. Its information includes landings for the day, prices, and other news of marketing interest.

2. The Bureau of Commercial Fisheries provides \$700,000 per year for a marketing service wherein it recruits the assistance of press, TV, and radio media for public service time for the purpose of advertising the feasibility of fish usages.

3. The Bureau also has a home economist service which provides advice and technical assistance to schools, hospitals and other institutions regarding fish diet and preparation of fish foods.

4. The Bureau provides a large technological program for the inspection of fishery products and methods for assisting the fish industry to improve fish processing.

5. The Bureau develops Government standards for fish products.

6. The Bureau is currently developing a large program for the processing and possible consumption of FPC.

7. A similar program is being run for the purpose of determining new uses of fish meal and fish oils.

8. The Bureau publishes a monthly magazine called the Commercial Fisheries Review which has a free circulation of approximately 6,000. Averaging 125 pages in length, the magazine includes information concerning fishing, fisheries research, fish locating techniques, fish catching techniques, new fishing gear being developed, fish storage techniques, fish processing techniques, fish marketing techniques, and home and commercial preparation of fish food products. It also has a large section on developments in various foreign fisheries programs.

9. The Bureau also has a large program devoted to new fish locating equipment and the development of new equipment, nets, etc., for the catching of fish.

10. The Bureau has various financial assistance programs with entail: (a) loans to vessel owners; (b) mortgage insurance programs; (c) fishery vessel construction subsidies.

My point is that in my view the State of Massachusetts would be wasting its money if it, in conjunction with another State or on its own, attempted to duplicate services offered to us by the very competent, hard-working, and the very informed Bureau of Commercial Fisheries which has offices in the major fishing ports of our country.

Mr. MACDONALD. Mr. Chairman, will the gentleman yield?

Mr. KEITH. I yield to the gentleman.

Mr. MACDONALD. Is it not true, and I am sure the gentleman would not want to say otherwise by inference, that if the State of Massachusetts is being serviced

in the field of fisheries, obviously it would not come into the plan that would be submitted by the agency through the Governor to the Department of Commerce.

Mr. KEITH. I would think it would be true. It is a matter of law. Although where we state that there shall be no duplication, we neglect to mention as I read the act and it extends to all governmental services. It possibly could be that governmental services are available and that there might be a duplication.

On pages 18 and 19, section 5, it says:

The Secretary shall not accept an annual technical services program for review and approval under this act unless the designated agency has, as certified thereto by the Governor or his designee—

(e) determined that such technical services program does not provide a service which on the date of such certification is economically and readily available in such State from private technical services, professional consultants, or private institutions.

It is conceivable a State could have a duplication of services that would be available under Government auspices.

Mr. MACDONALD. Mr. Chairman, will the gentleman yield?

Mr. KEITH. I yield to the gentleman.

Mr. MACDONALD. Since the gentleman has raised this subject, I call your attention to page 23, section (e) (2):

No funds appropriated pursuant to the provisions of this section shall be paid to any designated agency, participating institution, or person on account of any such agency or institution, to carry out any technical services activity or program in any State if such activity or program duplicates any activity or program readily available in such State from Federal or State agencies, including publicly supported institutions of higher learning in such State.

Mr. KEITH. I thank the chairman of the subcommittee for pointing that out. It does clarify the problem.

I would state that the Assistant Secretary of Commerce, Mr. Hollomon, used the fishing industry, as did the gentleman, as an example of a service which could be provided under this act.

Mr. WYDLER. Mr. Chairman, will the gentleman yield?

Mr. KEITH. I am glad to yield to the gentleman from New York.

Mr. WYDLER. The gentleman has fairly well disposed of the illustration given as to the need for this agency in the fishing industry. I come back to my original question. Where will this agency or this institution get the information it is going to make available to small business? Where will the information come from?

Mr. KEITH. As I visualize the operation of the agency, the duties of collection and dissemination of information which would be made available to business and commerce in a particular State would be the responsibility of the participating institutions which, for the most part, will be educational institutions.

For example, if there were to be some collection of information for small textile plants, they might very well use the Lowell Textile Institute or the South-eastern Massachusetts Institute of Tech-

nology, both of which are located close by small textile firms. These institutions would have a role to play in the collection of information and, in turn, the distribution of it.

Mr. WYDLER. The gentleman still has not answered my question.

Mr. HARRIS. Mr. Chairman, will the gentleman yield?

Mr. KEITH. I am glad to yield to the gentleman from Arkansas.

Mr. HARRIS. Let me see if I can help the gentleman. I hope I shall be able to.

The reason this was designed for an agency was that under the laws of the various States the Governor, in many instances, is the person on whom the responsibility falls. It turned out, however, that in some States, under the State laws, there were other groups or organizations, boards and so forth, which have such responsibility. For that reason, we made this a responsibility to a designated agency within the State. That agency within the State would be designated for a particular purpose. The purpose would be to try to coordinate with the educational institutions of the State, with the business community and with research people and others involved, for the purpose of obtaining this information and making it available to those in the business community who could not otherwise obtain it.

In a particular State, a designated agency might be MIT, as mentioned, or some other educational institution which would have responsibility for the program. That institution could then go to other institutions in the State. All of these institutions have their business schools and are now in the business of accumulating information in cooperation with business, research analysts, and so forth.

It is contemplated that with the funds here to be allocated on a matching basis to the States, these institutions about which we are talking—whether it be one or a dozen, if they work cooperatively together in the program—would, in working together, assimilate all the information and bring it to one central location within the State to be so designated. In that region, the information would be made available to all in business who might be interested in any particular problem.

That is, very briefly, a description of how this is expected to work.

Mr. KEITH. In my view, there is one most important flaw which I should like to discuss for 5 more minutes, if I may.

Mr. SPRINGER. Mr. Chairman, I yield 5 additional minutes to the gentleman from Massachusetts [Mr. KEITH].

Mr. KEITH. Mr. Chairman, I urge the House to consider for a moment a serious and costly flaw in an important piece of legislation, a flaw which could undermine the effectiveness of the proposal from its outset, a flaw which is unfair to the taxpayer, disparaging of our State governments, and which could perpetuate the unhealthy big brother trend in Federal assistance legislation. I am referring to H.R. 3420, the State Technical Services Act of 1965.

This act, as you have heard, proposes a 3-year program to disseminate, via the

offices of the Secretary of Commerce and through regional technical service centers, "the findings of science and technology throughout the American business, commerce and industrial community." The price tag on this ambitious program will ultimately reach \$40 million or more a year.

In many respects, Mr. Chairman, this is an excellent bill. Many of us have labored long and hard in committee to insure its workability. But there is a basic and potentially destructive flaw. During the all-important planning stages of this program, the period which will be most decisive as to the program's success or failure, the Federal Government will, in many cases, assume too much responsibility in the financing of the program. It is even possible that where the planning for the program is modest the Federal Government will have assumed the entire cost.

Experience should have taught us that, with few exceptions, this is not a good practice. In my opinion, it is not good government, and it certainly is not good business.

Mr. Chairman, I am not one of those who believe the Governors and State legislatures need Uncle Sam to guide them at every turn of government. I know that governors and legislators, like Congressmen, are human beings. If they contribute to a plan by helping to pay for it, they are going to take an interest and work to get the most out of that investment. In a word, contribution means interest. Lack of contribution or responsibility can just as surely lead to a lack of interest. A beneficial return on the tax dollar, success or failure of the program, can certainly hinge on such factors.

Every stockholder in a business knows he has a bread-and-butter motive for concerning himself with that business. Besides, for some reason, people do not seem to appreciate, fully at least, what they get handed them for nothing. On the other hand, they retain a high degree of working interest in a project in which they have a fundamental investment.

I saw a perfect example of this paradox in the town of Marshfield in my district just last week. The occasion was the dedication of a new school, being named for one of the teachers who, after many years of devoted service, was retiring.

When he rose to acknowledge this honor, his remarks touched on the fact that the construction of the school was the result of hard work and sacrifice on the part of the citizens of the town. Their faith in the future and in their youngsters had been the propellant for their mortgaging themselves to an extensive amount for more than a decade to come. This was something that the town wanted and had planned for, and therefore the town gave of itself willingly.

Can any of us say their interest and devotion would have been as complete and extensive had they had no part in the planning stages of this project? I doubt it.

Such, Mr. Chairman, is the unfortu-

nate prospect that looms for this proposal should the State legislatures not be involved in any way with the planning phases of the State technical services program. Will they be as anxious to appropriate the money that will be required to implement the plans, which may have been financed entirely by Federal grants, if they have not been consulted beforehand?

It has been argued that a Governor with an unfriendly legislature might be hamstrung by their unwillingness to cooperate with him even in the planning stage. I ask, then, would such a legislature be any more willing to appropriate the necessary money called for in the operational phase? Would they be any more willing to appropriate the money if those plans were drawn up, say, by a pet agency of the Governor's? Again, this hardly seems likely.

Mr. Chairman, I have faith in the legislatures of the 50 States of our great country. They are concerned with the needs of their citizens. They will put forth every necessary effort to obtain assistance, if it is worthwhile, in both the planning and the operational phases of this proposed program.

Now, it has been suggested that these outright grants are particularly necessary in some of the poorer States. And it has further been said that, therefore, the \$25,000 as an outright grant for planning purposes is vital because some of these States cannot even afford to match half that amount. If a State cannot afford \$12,500, how can it possibly afford the many thousands that will be required in the operational phases of the program? If a State is not willing or cannot afford to match funds in the planning stage, where is the money to come from for the program itself? Is the Federal Government merely going to pay out \$75,000 for plans that will never be implemented? Is it not unfair to the taxpayers of the country as a whole to invest money that will bring no return, even to the citizens of one State?

Three or four years ago we had before us a bill providing for Federal assistance to educational TV. This bill provided a \$10,000 grant to every State regardless of their need or regardless of their interest in the program.

Every State was authorized under the original proposal to collect \$10,000 from the Federal Government for planning purposes. We in the Committee on Interstate and Foreign Commerce amended that proposal and required that the grant to the State must be on a matching basis. We felt that a lot of the States would not undertake educational TV programs, and if they were going to undertake such an expensive program, they should be able to come forward with matching funds in the grant phase of the operation.

What happened? The House accepted the recommendation of the committee on participation in the planning stage. It went over to the Senate and, believe it or not, the Senate knocked out the grants for the planning phases entirely. So I think we really have a lesson to be learned from that particular incident and I would suggest, Mr. Chair-

man, that we should have the planning phase on a matching-grant basis.

Mr. Chairman, there are 28 States that have gone ahead on their own, and are in various stages of this kind of activity at the moment. Most of their planning has already been accomplished. All of it has been done at State expense. With the amendment which I shall offer later on, we can still say to those who have further planning to do, "We will help you underwrite your planning." To those who have not yet been able to begin, we can say, "With our help, you can now afford to plan." While to those who have concluded their plans we can say, "There will be more money available for sharing the operational costs—you can, in effect, go further than you hoped."

Inasmuch as the Federal Government is going to make, under this legislation, very substantial commitments which eventually will amount to \$40 million per year and perhaps much more, we have an obligation to make certain that only those programs which are essential are undertaken. And the best way to make sure that they are essential is to require the maximum amount of State participation and interest.

All of us recognize that there is always a "broker's fee" for doing business through the Federal Government. We know that the income tax has preempted the tax resources of all of our States. The existence of a matching fund requirement in the planning phase of this legislation will, in my view, serve as a further check on the drain of tax dollars for plans that may never be implemented.

Mr. Chairman, Federal grants-in-aid have been one of the most beneficial factors in preserving the balance in the federal system. When these grants require State participation, particularly in the planning phases, they can help to meet essential social and economic needs. And, by their emphasis on State participation, they can, while achieving worthwhile purposes, help to avert and retard the growth of arbitrary central authority.

In our additional views published in the report of the Committee on Interstate and Foreign Commerce on this bill, several of my colleagues, and I, stated:

One of the act's more serious drawbacks is the lack of provision for matching funds in the planning stages outlined in the bill. It is our feeling that such a provision would enable the State governments to become involved in the program from the beginning and to make more certain that the money would be wisely spent.

My amendment offers this practical incentive. It will give each State the opportunity for self-improvement through a system of matching grants.

In summary, Mr. Chairman, my amendment requiring matching funds in the planning stages of this proposal before us will, in the final analysis, result in better technical service centers for the business, commerce, and industry of the several States.

We will get more thoughtful planning, a better understanding of the program on the part of the State governments and more knowledge of the purposes and functions of the technical service cen-

ters by those who hopefully will ultimately benefit from their services.

I urge the adoption of my amendment. Mr. HARRIS. Mr. Chairman, I yield 5 minutes to the distinguished majority leader, the gentleman from Oklahoma [Mr. ALBERT].

(Mr. ALBERT asked and was given permission to speak out of order and to revise and extend his remarks.)

Mr. ALBERT. Mr. Chairman, I thank the distinguished chairman of the Committee on Interstate and Foreign Commerce for yielding this time to me.

Within a week's time there are new opportunities for union and management to arrive at a meeting of the minds. They must resolve their differences and reach a just and equitable settlement.

There is much at stake as negotiations continue. It is clear that a strike of the great steel industry would be inexcusable—and unforgivable—in this period of great crisis.

And this is why it is appropriate to go back to 1959 and 1956 for a moment, the years of the last steel strikes. Let no one forget the lessons of these steel strikes and the damage they caused to our economy and to our national growth. They serve as a constant reminder.

First. The idleness of workers on strike is a costly waste which neither they nor their country can afford. The 116-day steel strike in 1959 directly cost 42 million man-days of work. This was the equivalent of a 5-percent increase in the Nation's unemployment for a year and represented nearly 1 day off for every male worker in the country. Even the 36-day strike of 1956 cost this Nation directly 12 million man-days of work. And it is important to keep in mind that in the entire post-Korean period no labor dispute has come close to these steel strikes in causing idleness.

Second. A steel strike can put as big a dent in our economy in a couple of months as recession does in 8 or 9 months. During the steel strike in 1959, industrial production fell 6.5 percent from June to October, while during the recession from May 1960 to February 1961, the decline was 5.7 percent. Because of the steel strike, personal disposable income showed no rise whatsoever in the third quarter of 1959.

Third. In 1959 the effects of the steel strike spread to many industries and communities resulting in sharp production cutbacks. For example, there was a 12 percent reduction in fabricated metals production; a 45 percent reduction in motor vehicles and parts; and a \$5 billion drop in the rate of overall real gross national product, the first and only nonrecession decline since 1956 steel strike. In particular localities, the effects of the 1959 steel strike were especially severe. Manufacturing payrolls fell by an estimated 73 percent in Johnstown, Pa.; 62 percent in Youngstown, Ohio; and 35 percent in Pittsburgh.

Fourth. The 1959 steel strike nipped in the bud a possible surge in business investment. Actual plant and equipment outlays in the third quarter of 1959 fell 3 percent below the plans previously reported when businessmen found they could not get deliveries of steel equip-

In December 1959, the Commerce Department reported:

Supply shortages and uncertainties over near-term deliveries of capital goods have become major limiting factors affecting current movements in plant and equipment programs of business. The OBE-SEC survey of 3 months ago had pointed to some acceleration in the recovery in plant and equipment outlays; the latest survey indicates that seasonally adjusted these are expected to rise only slightly over this quarter and the next.

Finally, the rebound following the steel strike in 1959 built the economy up for a let down. When inventories were being restored in 1960, everything looked rosy—so rosy that nobody could see the recession coming. In fact, this misreading of the fundamental economic situation is the basis for the case that the strike was one of the major causes of the 1960-61 recession.

These are strong lessons and they are hard lessons. But we must profit by them. This Nation must not be condemned to repeat the experience of 1959 and 1956. In a real sense there are three parties represented at the conference table—the union, management and the American people.

I am confident that the wise and distinguished leaders of the steel industry and the steelworkers union through their concerted efforts to reach a satisfactory agreement will not let the American people down.

Mr. HARRIS. Mr. Chairman, I yield such time as he may use to the gentleman from Colorado [Mr. McVICKER].

(Mr. McVICKER asked and was given permission to revise and extend his remarks.)

Mr. McVICKER. Mr. Chairman, I rise in support of H.R. 3420, the State Technical Service Act of 1965.

The infusion into our industrial potential of American know-how and advanced science is best undertaken by local institutions specifically oriented to local industrial and economic problems.

This bill has the enthusiastic support of the business community of my area. I have had a number of meetings with businessmen and university leaders in my district discussing my own bill, H.R. 7335, which corresponds to the bill before the House.

From these meetings, I can report to the Congress that the overwhelming support for this measure, the awareness of its need, and the anticipation of its application gives tangible evidence of the leadership shown by the great State of Colorado in forging new paths of economic greatness for our country.

This bill would permit the Federal Government to join with State governments, universities, and local industry in stimulating the industrial and economic growth of States and regions in the Nation through the application of science and technology.

The bill is addressed to the economic problems about which we read every day—long-term unemployment, regional pockets of poverty, industries which are losing their competitive positions, and increasing foreign competition in both domestic and world markets. These problems point to the increasing need for developing mechanisms to bring the

latest developments in technology into the production lines and plants of our local industry.

Just as the problems are local, so should be their solution. This bill would establish mechanisms concentrated on the local level, utilizing local leadership, local initiative, local resources, and local participation. Federal funds, on a matching basis, would be used to encourage the establishment or expansion of local institutions specifically designed to meet the needs of the local economy.

A State wishing to participate in the program would designate an institution, either a State university or agency, to administer and coordinate the State's technical services program. This institution would prepare a 5-year plan, outlining the technological and economic situation in the State, the major regional and industrial problems, and the means to be used in assisting in their solution. The institution would also prepare an annual technical services program, including the objectives for the first year, the budget, and the responsibilities assigned to each qualified institution participating in the program.

The 5-year plan and the annual program would be submitted to the Secretary of Commerce. Federal matching funds would be made available to the designated institution to support eligible programs. The Secretary of Commerce would establish a formula designating the maximum annual Federal payment, taking the following criteria into consideration: First, population; second, level of industrial and economic development and productive efficiency; and third, technical resources.

His formula will be weighted to provide funds to States and regions where industrial development has lagged behind its potential and where technical resources are weak. The population criteria will be applied in a manner which will permit even the smallest and least populous States to participate in a meaningful and profitable program.

There are a variety of effective programs of university-industry cooperation in operation in 28 States at the present time. One especially notable program is conducted under the auspices of the Denver Research Institute, an integral part of the University of Denver which engages in sponsored research for government and industry. This institute offers ample evidence of the potential effectiveness of programs that the subcommittee is now considering. To stimulate the process of technology transfer, the DRI has developed a highly motivated staff of engineer-economists, engaged in effectively interpreting the significance of scientific and technological advancements to the commercial entrepreneur. These economists are studying new techniques for coupling technological innovations with potential users in industry, thereby providing the bridge between the generation of advanced technology and its use in technologically oriented as well as underdeveloped industries. In addition, these men are carrying out fundamental research on the processes by which technology is diffused and applied, seeking new ways to

accelerate the transfer of knowledge into use.

The Denver Research Institute consists of seven operating divisions: Chemistry, electronics, electromagnetic propagation, industrial economics, mechanics, metallurgy, and physics. Research interests in these divisions cover a complete spectrum from basic investigations to directed developmental efforts. A number of large research programs are also conducted by the institute outside the divisional structure.

But such programs, effective as they are, are still small in comparison to the need and opportunity in their regions. If we are to promote our economic growth to the fullest possible extent, if we are to achieve and sustain a high level of employment throughout our Nation, and if we are to improve our competitive position in world trade—the hiatus between the technological developments in our laboratories and their application in our industries must be erased. I believe this bill will accomplish much toward the end of nurturing our economic growth and prosperity.

Mr. SPRINGER. Mr. Chairman, I yield 5 minutes to the gentleman from Pennsylvania [Mr. CURTIN].

Mr. CURTIN. Mr. Chairman, I have asked for this time in order to propound a question of the distinguished chairman of the Committee on Interstate and Foreign Commerce. I had several mental reservations about this bill when we started to consider it, but, by amendment, they have been largely dissipated.

There is one feature of the bill, however, on which I would like some additional information from our distinguished chairman. I feel that in their enthusiasm, these designated agencies, provided for in the legislation, may go beyond the bounds of dissemination of existing information and go into research and development programs. I would like the opinion of the chairman as to the possibility of this happening under the terms of this bill.

Mr. HARRIS. Mr. Chairman, will the gentleman yield?

Mr. CURTIN. I yield to our distinguished chairman.

Mr. HARRIS. The gentleman refers to section 5, paragraph (e), and I think it would be advisable to quote it. This has reference to the duties and responsibilities of the Secretary, meaning the Secretary of Commerce, with reference to his acceptance of the program for review and approval. I would also call this to the attention of the gentleman from New York who was speaking with me about this a few minutes ago.

The Secretary shall not accept a plan unless it has been "determined that such technical services program does not provide a service which on the date of such certification is economically and readily available in such State from private technical services, professional consultants, or private institutions."

In other words, this is to make it abundantly clear the program is not to interfere with the traditional type of program made available on a consulting

basis, or by private agencies or institutions.

Mr. CURTIN. That answers the question as to whether or not this particular legislation would permit competition of these governmental agencies with private firms. However, I would further ask whether it is not the intent of this committee that the legislation is to provide only for the dissemination of existing information and is not to go into the field of research and development?

Mr. HARRIS. There is no intention at all that this program will go into either research or development. It does provide, if the gentleman will recall, that under the program the agency designated shall hold seminars and such meetings with appropriate businesses for the purpose of advising these businesses on what is available, and so forth, such as was explained by the gentleman from Illinois earlier in connection with a particular farm program.

But insofar as research and development is concerned there is none intended. I think the gentleman is probably referring to the report on page 4.

Mr. CURTIN. I thank the gentleman.

Mr. HARRIS. Mr. Chairman, I yield 5 minutes to the gentleman from Texas [Mr. PICKLE], a member of the committee.

Mr. PICKLE. Mr. Chairman, I rise today in support of H.R. 3420, a vital measure which will help coordinate the dissemination of business and scientific data to interested business and governmental agencies.

This bill is designed to place the findings of science into the hands of American enterprise more effectively and efficiently. It would provide vital clearinghouses for the compilation and distribution of significant research data that our free enterprise system is constantly demanding.

This bill does not create competition within the business world, or competition between free enterprise and Government. Rather, it will achieve a more effective application of the findings of scientific research, and thereby improve our Nation's competitive position in world markets. I am glad that groups like the engineering profession have joined with other business interests to recommend that these services be supplied.

In my own district, I am most familiar with the availability and interest of the University of Texas in participating in this program. That university is a rapidly growing research center and is constantly engaged in valuable scientific studies. When efficiently assembled and compiled in a research center or clearinghouse, these findings could be disseminated throughout our State for the use and benefit of all segments of our economy.

The University of Texas is only one example of many fine research institutions throughout the country which could contribute much to the success of this program. I hope this important legislation will be promptly enacted.

Mr. HARRIS. Mr. Chairman, I yield such time as he may require to the gen-

tleman from Georgia [Mr. STEPHENS], one of the cosponsors of this program.

Mr. STEPHENS. Mr. Chairman, I rise in support of this bill. I think it is a fine program for America. My State is now cooperating in the pilot efforts and I urge that this legislation be given favorable consideration by the Congress.

[Mr. STEPHENS further addressed the Committee. His remarks will appear hereafter in the Appendix.]

Mr. HARRIS. Mr. Chairman, I yield to the gentleman from Iowa [Mr. SCHMIDHAUSER], who is one of the cosponsors of this legislation, such time as he may require.

Mr. SCHMIDHAUSER. Mr. Chairman, I rise in support of the State Technical Services Act of 1965.

The proposed State Technical Services Act of 1965 would enable the Federal Government to make grants to the States in support of programs to achieve better commercial use of the latest findings of science and technology. Such programs, planned and carried out locally, would place these findings in the hands of local business and industry.

Such a national program is not only in the best traditions of America, it is in the best traditions of science. You may remember that Louis Pasteur, the great 19th century French bacteriologist discovered an understanding of the process of fermentation, with the practical method of control which we call pasteurization, while working in the 1850's on behalf of French beer and winemakers. Joseph Lister, an Englishman, saw the applicability of Pasteur's discoveries to medicine, and in 1865, he first sterilized incisions in surgery.

Pasteur went on to save the silk industry of France and other silk-producing countries by developing controls for silkworm disease. Then he produced successful inoculations against cattle anthrax and chicken cholera. These methods he called vaccination, which was his way of paying tribute to Edward Jenner, another Englishman, who had given that name to his discovery of the means of protecting man against smallpox. Pasteur also perfected the preventive vaccine against rabies in man and animals.

But even before those achievements, T. H. Huxley had described Pasteur's discoveries as having been so valuable as to have reimbursed the whole cost of the war indemnity paid by France to Germany in 1870.

Science was understandably crude, and the application of research results correspondingly simple, in Pasteur's day, 100 years ago. Even so, the dissemination of Pasteur's results was crucial to Lister; scientists have always exchanged information freely. Today, by contrast, science and technology are complex, and getting access to pertinent and useful information is, at best, difficult for business and industry. Even with our high level of education and our mass media of communications, we are losing the battle of the transfer of technology to the places where it is needed.

Since the outbreak of World War II, the Nation has spent more than \$100 billion on scientific research and develop-

ment. Only a small portion of that total has been directed toward civilian-oriented activities, yet from such R. & D. comes the greatest stimulus to economic growth. The rewards for a higher level of technology, in terms of economic growth, higher standards of living, and gains in employment, are surely worth seeking. Clearly, one sure way of seeking those rewards would be to pass the State Technical Services Act of 1965.

I am interested in this bill, first, because I come from an agricultural State. That is why the Pasteur story holds so much significance for me. I am interested in it, second, because there are several contemporary precedents for this State technical services program, and I am proud to say that one of them is located in my own State of Iowa. Briefly, the Iowa Legislature in 1953 appropriated \$250,000 for the first 2 years' operation of a Center for Industrial Research and Services as a part of the College of Engineering at the Iowa State University. CIRAS, as it is called, assists industry in a variety of ways. Primarily it coordinates the transfer of technological information. Actual solutions may be developed by Iowa State University, the State University of Iowa, other State educational institutions or agencies, Federal Government agencies, or even private organizations.

Of course, the State Technical Services Act would not authorize support for research, but it would stimulate and encourage the dissemination of research results. Even the great discoveries of Pasteur were worthless until they were brought out of the laboratory and put into practice by industry or the medical profession.

Breakthroughs could not necessarily be expected to result from a modest program such as Iowa's—but it is always possible. The dozens of letters I have seen directed to CIRAS by grateful businessmen convinces me that a mechanism such as the State technical services program must be made available nationally.

(Mr. SCHMIDHAUSER asked and was given permission to revise and extend his remarks.)

Mr. SPRINGER. Mr. Chairman, I yield 5 minutes to the gentleman from Massachusetts [Mr. CONTE].

(Mr. CONTE asked and was given permission to revise and extend his remarks.)

Mr. CONTE. Mr. Chairman, I rise in support of H.R. 3420 whereby the Federal Government would provide assistance, through State and regional agencies, to enable business and industry to take better advantage of the fruits of existing research and technology. In my opinion, it is far too seldom that we in this body have an opportunity to act on a program that embraces both the visionary and the utterly practical, that is both completely unprecedented and completely feasible. The plan proposed in H.R. 3420 makes a great more sense to me than a lot of the aid and assistance programs that have come before us in recent months under the banner of the Great Society.

I have been among the strongest supporters of this program since its concep-

tion and was one of the cosponsors of the original bill, my bill being H.R. 7708.

There is little of a revolutionary nature in this plan, and yet it is a refreshing departure from what appears to be the present way of doing things. Here is no wild-eyed dream program, no half-baked scheme calling for the outlay of billions of tax dollars with only theoretical gains as justification. This is no sudden cure-all for an ailing society, no new and revolutionary welfare program; and it requires no new bureaucratic empire.

This is rather a simple, practical, feasible, efficient and effective means whereby we can make better, more effective use of what we have already bought and paid for.

The proposed State technical services plan does credit to its innovators because it acknowledges a principle in which I also believe very strongly—namely, that local or regional problems are best evaluated and best resolved at the local or regional level. The matching assistance funds which would be made available under this plan would be spent by the local institutions under which these services would be performed. Users of the service, local business and industry for the most part, would be dealing with an institution which has a thorough practical and academic knowledge of the specific local economic factors with which industrialists and businessmen must deal from day to day.

In my own State of Massachusetts, there has been optimistic speculation that the University of Massachusetts, with its superb faculty and excellent facilities, would be named the appropriate institution to administer this program for the Commonwealth. I might add that the president of this fine university, Dr. John Lederle, has expressed keen interest and support for the idea personally to me. I am confident there would be ample enthusiasm at the University of Massachusetts to assure success for the program.

I would also like to point out that among the earliest and most enthusiastic supporters of the concepts embodied in H.R. 3420 is Prof. Sydney T. Maunder, an electrical engineer and visiting lecturer in the electrical engineering department at the University of Massachusetts. Professor Maunder's faith in the idea was strong enough to bring him to Washington at his own expense to testify on behalf of the bill, his testimony appearing on page 64 of the hearings before the Subcommittee on Commerce and Finance of the Committee on Interstate and Foreign Commerce.

Professor Maunder's testimony contains much food for thought and, perhaps surprising because he is a man of science, is couched in practical, meaningful terms. I strongly recommend the reading of his testimony to all of my colleagues.

Mr. Chairman, among those who would benefit most from this program are the small, independent merchants and industrialists. Both in my capacity as representative for a great many small businessmen in my district, and as a member of the House Select Committee on Small Business, I am ever more keenly

aware of the restraints and roadblocks that stand in the way of prosperity and success for many of these independent businessmen. Certainly not the least of these is their limited capacity to take proper advantage of the vast technological advances which our society has generated.

There are endless examples of floundering and failing business ventures whose fault lies solely with the inability of management to keep pace with new techniques and industrial innovations. The impact of bypassing technology is nowhere greater than in the area of small business.

The program proposed in H.R. 3420 goes straight to the heart of this situation. It would provide locally oriented machinery to bring this technology to these businessmen, and to put it in practical, useful terms for them.

In my opinion, the State Technical Services Act of 1965 is an exciting new prospect, a new, broad-scale approach to solving the persistent and chronic problems of small business. It is my fervent hope that H.R. 3420 will be passed without delay.

In closing, I wish to take this opportunity to compliment the chairman and the ranking minority member of Committee on Interstate and Foreign Commerce for their leadership in bringing this fine piece of legislation to the floor of the House. I refer especially to my good colleague from Massachusetts [Mr. MACDONALD].

Mr. FARNSLEY. Mr. Chairman, I think this State technical services program is wonderful. Some people will think it is only the Government spending money. In this case it is not spending money but investing money, because this money will come bouncing back many times over in increased tax revenues. I cannot see anything wrong with the State technical services program.

We are all familiar with the Agricultural Extension Service, which has certainly paid for itself over and over again during the 51 years it has been in operation. It has long seemed unfair to me that there was not a service available to business and industry that parallels the service available to the farmer. Especially the system which takes the results of research and channels it through the county agent to every farmer or homemaker who wants to know the latest.

Now, in the State technical services program, we have an opportunity to use this same tested and proven system for putting to use the scientific and technical information resulting from our Nation's annual \$20 billion research and development investment.

Approximately 28 States are now operating programs of technical assistance to industry. Of these, perhaps five can be considered comprehensive efforts of the type promised by the State Technical Services Act. They have been proven to work well. In fact, all of them have been expanded, industry has endorsed them enthusiastically, and if you have occasion to write and ask what they are doing, you will be quite impressed with the information they can furnish

you on any specific subject in which they specialize. This information is in the form of reports, publications, training films, proceedings of conferences, and so forth.

I mentioned that there are 28 States which now have some kind of technical assistance to industry. Aside from the top five, which are pathfinding in complete programs, the rest are either limited because of insufficient funds or staffs, or they are more heavily oriented toward industrial research or technological education. My own Commonwealth of Kentucky is a good example of a limited activity.

The University of Kentucky College of Engineering includes an engineering experiment station. Its objectives are: First, to organize, initiate, and promote engineering research of special interest to the State; Second, to aid and consult with industry regarding its research problems; third, to promote the conservation and utilization of the State's resources; and, fourth, to provide support for research and education in the fundamental and applied sciences.

My own alma mater, the University of Louisville, also has an outstanding and well-qualified College of Engineering and an engineering experiment station. The University of Louisville got its land grant from the Commonwealth of Kentucky in 1798.

In many sections of the country, industry has felt the need for catalytic institutions other than the universities, so local interests have founded nonprofit research institutes to supplement, without in any way competing with, the services of the universities and their research programs. My own Commonwealth of Kentucky is no exception. Civic and industrial leaders have founded, at Lexington, the Spindletop Research Institute. It is patterned on the lines of Midwest Research Institute at Kansas City, Southern Research Institute at Birmingham, and Southwest Research Institute at San Antonio.

As the State technical services program is implemented, the Governor of a given State would name a State institution or a State agency to prepare and administer a technical services plan for his State. Two or more States could join in a cooperative program and name a regional institution. This would be known as the "designated agency."

But the actual work could be done at any qualified institution. This would be a college or university which is accredited in science, engineering, or business administration, or a competent nonprofit organization, or a State agency. Thus, in Kentucky, the Governor might designate the University of Kentucky as the designated agency. It would prepare a 5-year plan outlining a technical service program to solve the most pressing problems. It would listen to all kinds of advice before it prepared that plan. All qualified institutions in the State would be invited to participate in the planning. So I would expect the University of Louisville, Berea College, and the other fine liberal arts colleges of the State of Kentucky, as well as the Spindletop Research Institute and sev-

eral State departments to participate in the planning and to receive assignments in the program.

In conclusion, in my State as well as many other States, there is already a wealth of fine institutions, already engaged in the types of activities outlined as technical services in the proposed legislation. But their funds are limited, and they are not able to scratch the surface of what needs to be done. The State Technical Services Act is absolutely essential to tie together all the information that is available already, and present it to business in a way that businessmen can use it immediately.

Mr. HUOT. Mr. Chairman, on February 15, I introduced H.R. 4879 to the Congress, a bill similar to the one presently under discussion and introduced by Mr. HARRIS, the distinguished chairman of my committee.

The committee substitute, I believe, strengthens the basic reason why such a measure should be enacted into law. By placing new ideas and findings into the hands of local industrial and business concerns, the backbone of our economic structure is reinforced.

Arguments may be heard concerning increasing Federal involvement in our Nation's private economy. However, these arguments, when applied to this legislation, are not applicable due to the tight and specific guarantee of strict local and State authorization and implementation of a State technical services program.

Basically, this bill provides for the use of Federal funds by a State designated educational institution under a State plan to enhance the economic posture of that State. It is explicitly stated that the Secretary of Commerce shall not even review or approve a proposal unless the Governor of a State first submits his endorsement of the program.

This bill as applied to my State of New Hampshire will help assure the existence of a stable economic base.

As I stated on February 17 on the floor of the House, New Hampshire is faced with an economic challenge for the future.

There are now less than 700,000 people now residing in the Granite State. Of our 10 counties, 3 are presently designated as depressed areas by the Area Redevelopment Administration. The Portsmouth Naval Shipyard, whose existence affects over 100,000 people, either directly or indirectly has been scheduled for closure by a Department of Defense announcement last November. The problems of the shoe industry, a major factor in New Hampshire's economy, are well known to this Congress and textile industrial activity in New Hampshire has been decreasing at a steady pace for the past 10 years.

These problems in New Hampshire are not unique, but I believe are typical of many areas in the United States.

To provide existing industries, both large and small, with useful information and new techniques would be a stimulant for expansion and would aid in the unemployment situation now realized in certain areas. It would also act as an

inducement for the establishment of new concerns.

The appropriation of \$60 million by this Congress over a 3-year period would be a very important investment for strengthening our economic base. This program has been indorsed by the Department of Commerce, by numerous private concerns, and by a multitude of educational institutions. It is a positive program for the future which I again believe is essential and urge this House to take immediate and positive action.

Mr. BRADEMAS. Mr. Chairman, I rise in support of H.R. 3420. Each year the Federal Government spends millions upon millions of dollars in financing basic scientific research and development work by universities, nonprofit institutions, and industry. The bill now under consideration is aimed at maximizing the application of the results of this research by bringing it to bear on local industrial and economic problems. Its goal is the dissemination of information from our growing wealth of scientific and technical knowledge. Research in 1965 moves so quickly that today's innovation was obsolete yesterday. It is exceedingly difficult for the scientific and industrial community to keep abreast of day-to-day advances in the technical disciplines. The proposed legislation authorizes \$60 million for a 3-year program of matching grants to States to support State or regional programs to achieve more effective commercial use of scientific discoveries. It will operate through local technical service programs specifically designed to inform local businessmen and enterprises about the most current technological advances. This bill will add muscle to the national economy by enriching industry through the application of advanced technology. It will inspire employment by providing industry with new techniques and new products. It will strengthen the position of American products in the international marketplace. Yankee ingenuity—long the foundation of our economic preeminence—does us no good while hidden under the proverbial bushel basket. This bill permits us to remove that basket and put our new ideas onto the production line.

Mr. HARRIS. Mr. Chairman, I have no further requests for time.

Mr. SPRINGER. Mr. Chairman, I have no further requests for time.

The CHAIRMAN. Pursuant to the rule, the Clerk will now read the substitute committee amendment printed in the reported bill as an original bill for the purpose of amendment.

The Clerk read as follows:

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

DECLARATION OF PURPOSE

SECTION 1. That Congress finds that wider diffusion and more effective application of science and technology in business, commerce, and industry are essential to the growth of the economy, to higher levels of employment, and to the competitive position of United States products in world markets. The Congress also finds that the benefits of federally financed research, as well as other research, must be placed more effectively in the hands of American business, commerce, and industrial establishments.

The Congress further finds that the several States through cooperation with universities, communities, and industries can contribute significantly to these purposes by providing technical services designed to encourage a more effective application of science and technology to both new and established business, commerce, and industrial establishments. The Congress, therefore, declares that the purpose of this Act is to provide a national program of incentives and support for the several States individually and in cooperation with each other in their establishing and maintaining State and interstate technical service programs designed to achieve these ends.

DEFINITIONS

SEC. 2. For the purposes of this Act—

(a) "Technical services" means activities or programs designed to enable businesses, commerce, and industrial establishments to acquire and use scientific and engineering information more effectively through such means as—

(1) preparing and disseminating technical reports, abstracts, computer tapes, microfilm, reviews, and similar scientific or engineering information, including the establishment of State or interstate technical information centers for this purpose;

(2) providing a reference service to identify sources of engineering and other scientific expertise; and

(3) sponsoring industrial workshops, seminars, training programs, extension courses, demonstrations, and field visits designed to encourage the more effective application of scientific and engineering information.

(b) "Designated agency" means the institution or agency which has been designated as administrator of the program for any State or States under section 3 or section 7 of this Act.

(c) "Qualified institution" means (1) an institution of higher learning with a program leading to a degree in science, engineering, or business administration which is accredited by a nationally recognized accrediting agency or association to be listed by the United States Commissioner of Education, or such an institution which is listed separately after evaluation by the United States Commissioner of Education pursuant to this subsection; or (2) a State agency or a private, nonprofit institution which meets criteria of competence established by the Secretary of Commerce and published in the Federal Register. For the purpose of this subsection the United States Commissioner of Education shall publish a list of nationally recognized accrediting agencies or associations which he determines to be reliable authority as to the quality of science, engineering, or business education or training offered. When the Commissioner determines that there is no nationally recognized accrediting agency or association qualified to accredit such programs, he shall publish a list of institutions he finds qualified after prior evaluation by an advisory committee, composed of persons he determines to be specially qualified to evaluate the training provided under such programs.

(d) "Participating institution" means each qualified institution in a State, which participates in the administration or execution of the State technical services program as provided by this Act.

(e) "Secretary" means the Secretary of Commerce.

(f) "State" means one of the States of the United States, the District of Columbia, the Commonwealth of Puerto Rico, or the Virgin Islands.

(g) "Governor", in the case of the District of Columbia, means the Board of Commissioners of the District of Columbia.

SELECTION OF DESIGNATED AGENCY

SEC. 3. The Governor of any State which wishes to receive Federal payments under this Act in support of its existing or planned

technical services program shall designate, under appropriate State laws and regulations, an institution or agency to administer and coordinate that program and to prepare and submit a plan and programs to the Secretary of Commerce for approval under this Act.

PLANS AND PROGRAMS

SEC. 4. The designated agency shall prepare and submit to the Secretary in accordance with such regulations as he may publish—

(a) A five-year plan which may be revised annually and which shall: (1) outline the technological and economic conditions of the State, taking into account its region, business, commerce, and its industrial potential and identify the major regional and industrial problems; (2) identify the general approaches and methods to be used in the solution of these problems and outline the means for measuring the impact of such assistance on the State or regional economy; and (3) explain the methods to be used in administering and coordinating the technical services program.

(b) An annual technical services program which shall (1) identify specific methods, which may include contracts, for accomplishing particular goals and outline the likely impact of these methods in terms of the five-year plan; (2) contain a detailed budget, together with procedures for adequate fiscal control, fund accounting, and auditing, to assure proper disbursement for funds paid to the State under this Act; and (3) indicate the specific responsibilities assigned to each participating institution in the State.

REVIEW OF PLANS AND PROGRAMS BY SECRETARY

SEC. 5. The Secretary shall not accept the five-year plan of a State for review and approval under this Act unless the Governor of the State or his designee determines and certifies that the plan is consistent with State policies and objectives; and the Secretary shall not accept an annual technical services program for review and approval under this Act unless the designated agency has, as certified thereto by the Governor or his designee—

(a) invited all qualified institutions in the State to submit proposals for providing technical services under the Act;

(b) coordinated its programs with other States and with other publicly supported activities within the State, as appropriate;

(c) establish adequate rules to insure that no officer or employee of the State, the designated agency, or any participating institution, shall receive compensation for technical services he performs, for which funds are provided under this Act, from sources other than his employer, and shall not otherwise maintain any private interest in conflict with his public responsibility;

(d) determined that matching funds will be available from State or other non-Federal sources;

(e) determined that such technical services program does not provide a service which on the date of such certification is economically and readily available in such State from private technical services, professional consultants, or private institutions;

(f) planned no services specially related to a particular firm or company, public work, or other capital project except insofar as the services are of general concern to the industry and commerce of the community, State, or region;

(g) provided for making public all reports prepared in the course of furnishing technical services supported under this Act or for making them available at cost to any person on request.

APPROVAL BY SECRETARY

SEC. 6. The Secretary shall review the five-year plan and each annual program submitted by a designated agency under section 4 or section 7, and shall approve only those which (1) bear the certification required by

the Governor or his designee under section 5; (2) comply with regulations and meet criteria that the Secretary shall promulgate and publish in the Federal Register; and (3) otherwise accomplish the purposes of this Act.

INTERSTATE PROGRAMS

SEC. 7. Two or more States may cooperate in administering and coordinating their plans and programs supported under this Act, in which event all or part of the sums authorized and payable under section 10 to all of the cooperating States may be paid to the designated agency, participating institutions, or persons authorized to receive them under the terms of the agreement between the cooperating States. When the cooperative agreement designates an interstate agency to act on behalf of all of the cooperating States, it shall submit to the Secretary for review and approval under section 6 an interstate five-year plan and an annual interstate technical services program which, as nearly as practicable, shall meet the requirements of section 4 and section 5.

CONSENT OF CONGRESS

SEC. 8. (a) The consent of the Congress is given to any two or more States to enter into agreements or compacts, not in conflict with any law of the United States, for cooperative efforts and mutual assistance and in designating agencies, under section 7, for accomplishing the purposes of this Act.

(b) The right to alter, amend, or repeal this section, or consent granted by this section, is expressly reserved.

ADVISORY COUNCIL

SEC. 9. Each designated agency shall appoint an advisory council for technical services, the members of which shall represent broad community interests and shall be qualified to evaluate programs submitted under section 4. The advisory council shall review each annual program, evaluate its relation to the purposes of this Act, and report its findings to the designated agency and the Governor or his designee. Each report of each advisory council shall be available to the Secretary on request. Members of any such advisory council shall not be compensated for serving as such, but may be reimbursed for necessary expenses incurred by them in connection with attending meetings of any advisory council of which they are members.

AUTHORIZATION OF APPROPRIATIONS AND PAYMENTS

SEC. 10. (a) There are authorized to be appropriated for the purposes of this Act, \$10,000,000 for the fiscal year ending June 30, 1966; \$20,000,000 for the fiscal year ending June 30, 1967; \$30,000,000 for the fiscal year ending June 30, 1968.

(b) From these amounts, the Secretary is authorized to make an annual payment to each designated agency, participating institution, or person authorized to receive payments in support of each approved technical services program. Maximum amounts which may be paid to the States under this subsection shall be fixed in accordance with regulations which the Secretary shall promulgate and publish in the Federal Register from time to time, considering (1) population according to the last decennial census; (2) business, commercial, industrial and economic development and productive efficiency; and (3) technical resources.

(c) The Secretary may reserve an amount equal to not more than 20 per centum of the total amount appropriated for each year under this section and is authorized to make payments from such amount to any designated agency or participating institution for technical services programs which he determines have special merit or to any qualified institution for additional programs which he determines are necessary to accomplish the purposes of this Act, under criteria and regu-

lations that he shall promulgate and publish in the Federal Register.

(d) An amount equal to not more than 5 per centum of the total amount appropriated each year under this section shall be available to the Secretary for the direct expenses of administering this Act.

(e) (1) No amount paid for any technical services program under subsection (b) or (c) shall exceed the amount of non-Federal funds expended to carry out such program: *Provided*, That the Secretary may pay an amount not to exceed \$25,000 a year for each of the first three fiscal years to each designated agency, other than a designated agency under section 7, to assist in the preparation of the five-year plan and the initial annual technical services programs, without regard to any of the preceding requirements of this section.

(2) No funds appropriated pursuant to the provisions of this section shall be paid to any designated agency, participating institution, or person on account of any such agency or institution, to carry out any technical services activity or program in any State if such activity or program duplicates any activity or program readily available in such State from Federal or State agencies, including publicly supported institutions of higher learning in such State.

ASSISTANCE BY THE SECRETARY

SEC. 11. The Secretary is authorized and directed to aid designated agencies in carrying out their technical services programs by providing reference services which a designated agency may use to obtain scientific, technical, and engineering information from sources outside the State or States which it serves, for the purposes of this Act.

RULES AND REGULATIONS

SEC. 12. The Secretary is authorized to establish such policies, standards, criteria, and procedures and to prescribe such rules and regulations as he may deem necessary or appropriate for the administration of this Act.

LIMITATIONS

SEC. 13. (a) Nothing contained in this Act shall be construed as authorizing a department, agency, officer, or employee of the United States to exercise any direction, supervision, or control over, or impose any requirements or conditions with respect to the personnel, curriculum, methods of instruction, or administration of any educational institution.

(b) Nothing contained in this Act shall be deemed to affect the functions or responsibilities under law of any other department or agency of the United States.

ANNUAL REPORT

SEC. 14. (a) Each designated agency shall make an annual report to the Secretary on or before the first day of September of each year on the work accomplished under the technical services program and the status of current services, together with a detailed statement of the amounts received under any of the provisions of this Act during the preceding fiscal year, and of their disbursement.

(b) The Secretary shall make a complete report with respect to the administration of this Act to the President and the Congress not later than January 31 following the end of each fiscal year for which amounts are appropriated pursuant to this Act.

EVALUATION

SEC. 15. Within three years from the date of the enactment of this Act, the Secretary shall appoint a public committee, none of the members of which shall have been directly concerned with the preparation of plans, administration of programs or participation in programs under this Act. The Committee shall evaluate the significance and impact of the program under this Act

and make recommendations concerning the program. A report shall be transmitted to the Secretary within sixty days after the end of such three-year period.

TERMINATION

SEC. 16. Whenever the Secretary, after reasonable notice and opportunity for hearing to any designated agency or participating institution receiving funds under this Act finds that—

(a) the agency or institution is not complying substantially with provisions of this Act, with the regulations promulgated by the Secretary, or with the approved annual technical services program; or

(b) any funds paid to the agency or institution under the provisions of this Act have been lost, misapplied, or otherwise diverted from the purposes for which they were paid or furnished—

the Secretary shall notify such agency or institution that no further payments will be made under the provisions of this Act until he is satisfied that there is substantial compliance or the diversion has been corrected or, if compliance or correction is impossible, until such agency or institution repays or arranges for the repayment of Federal funds which have been diverted or improperly expended.

REPAYMENT

SEC. 17. Upon notice by the Secretary to any designated agency or participating institution that no further payments will be made pending substantial compliance, correction, or repayment under section 16, any funds which may have been paid to such agency or institution under this Act and which are not expended by the agency or institution on the date of such notice, shall be repaid to the Secretary and be deposited to the account of the appropriations from which they originally were paid.

RECORDS

SEC. 18. (a) Each recipient of a grant under this Act shall keep such records as the Secretary shall prescribe, including records which fully disclose the amount and the disposition of such grant, the total cost of the related approved program, the amount and nature of the cost of the program supplied by other sources, and such other records as will facilitate an effective audit.

(b) The Secretary and the Comptroller General of the United States, or any of their duly authorized representatives, shall have access to any books, documents, papers, and records of the recipient that are pertinent to amounts received under this Act.

SHORT TITLE

SEC. 19. This Act may be cited as the "State Technical Services Act of 1965".

Amend the title so as to read: "A bill to promote commerce and encourage economic growth by supporting State and interstate programs to place the findings of science usefully in the hands of American enterprise."

Mr. HARRIS (interrupting the reading). Mr. Chairman, in view of the fact that we have had full debate and explanation of the bill, since the Clerk has been reading the section dealing with the declaration of purpose, and the next section deals with definitions, and since I feel certain it is generally understood that the purpose of the bill is to provide for disseminating technical and scientific information to the business community, I ask unanimous consent that the bill be considered as read, printed in the RECORD, and open for amendment at any point.

The CHAIRMAN. Is there objection to the request of the gentleman from Arkansas?

There was no objection.

Mr. GROSS. Mr. Chairman, I move to strike out the first word.

Mr. Chairman, I take this time—and I shall not use 5 minutes, I hope—to ask a question or two concerning the bill of the distinguished chairman of the committee, the gentleman from Arkansas [Mr. HARRIS].

I have been reading the additional views of the minority members of the committee, which indicate that much information has been given by a substantial number of organizations, such as the Department of Defense, the Atomic Energy Commission, the Federal Council for Science and Technology, the Science Information Exchange, and so on and so forth, and that there is in the Department of Commerce a clearinghouse for scientific and technical information. On page 26 of the report I note that additional information has been provided by MIT Associates, Stanford Research, the Illinois Institute of Technology, Arthur T. Little, and the American Society for Metals and so on and so forth.

I wonder why it is necessary to spend \$60 million to provide either a clearinghouse for information or to provide for gathering information when apparently there are contract organizations, probably being paid a good many millions of dollars, to provide information in addition to the agencies and departments of the Government. Can the gentleman tell me why \$60 million is required under these circumstances?

Mr. HARRIS. Mr. Chairman, will the gentleman yield?

Mr. GROSS. I will be glad to yield to the gentleman.

Mr. HARRIS. I will endeavor again very briefly to explain the purposes of this.

In the first place, and basically what is behind this program, is the idea of getting this information to all of the business of the country in order that we can have greater opportunities for the type of small business and others who do not have the benefit of and are not big enough to get the benefit of the information that the gentleman refers to.

What we are doing is we are seeing a situation develop in the country where big business is getting bigger because it is in a position to obtain this information with its own staff, but smaller business is being handicapped more and more and is on the wane. It is estimated by those who have gone into this that if we will put it into the gentleman's State of Iowa and my State and other States, where thousands and thousands of smaller business concerns may have the advantage of it—if we put it into those places, then the smaller business will be able to develop along with the development of the big business of the country.

Mr. GROSS. Are the States in such a condition that they cannot establish it themselves? Most States have some sort of development commission. Can they not communicate with the Department of Commerce as the established clearinghouse for this information?

Mr. HARRIS. That is the great difficulty about it. The Department of Commerce does have certain information available. We appropriate millions of dollars to the Department of Commerce for certain information.

Mr. GROSS. Yes, we certainly do.

Mr. HARRIS. But they do not bring together, or they have not as yet, this scientific information and the technical services that they are in a position to disseminate to the business community in general throughout the country. There again bigger business gets it but not the general average business.

Mr. MACDONALD. Mr. Chairman, will the gentleman yield to me?

Mr. GROSS. Yes. Of course.

Mr. MACDONALD. I would like to make two points to the gentleman from Iowa. No. 1, your own State has it.

Mr. GROSS. I understand that.

Mr. MACDONALD. And the gentleman who runs that Center for Industrial Research and Service at the Iowa State University, Mr. Waldo Wagner, testified before the committee at length and said that he thought this program was not only a great one but was long overdue and he heartily subscribed to it. He thought that it would improve the economy of Iowa itself.

A second point I would like to make is that there cannot be any duplication by the Federal Government. If the gentleman will look at the bill on page 23, section (e) (2), it specifically prohibits any funds under this bill being used that would duplicate any activity of a Federal or State agency.

Mr. GROSS. I will say to the gentleman, if he can devise some way by which the agriculture of Iowa can obtain the \$1 billion a year that it is not getting as part of its fair share of the national income, he will have accomplished something. But I do not think this bill or the spending of this \$60 million is going to get to that problem at all. No other Federal program has. If it does, it will be working a miracle.

The CHAIRMAN. The time of the gentleman from Iowa [Mr. Gross] has expired.

Mr. HARRIS. Mr. Chairman, I ask for recognition.

The CHAIRMAN. The Chair recognizes the gentleman from Arkansas [Mr. HARRIS].

Mr. HARRIS. Mr. Chairman, I yield to the gentleman from Iowa.

Mr. GROSS. I thank the gentleman for yielding. Did the gentleman's committee go into the cost of these contract organizations, such as are mentioned on page 26 of the report?

Mr. HARRIS. I would say to the gentleman that the committee did give consideration to this subject matter. The gentleman from Pennsylvania [Mr. CURTIN] was quite active in that regard in developing it, and through his very effective work, as usual, the committee adopted a couple of amendments in order to satisfy what had been brought to his attention. He handled the program to make it more workable. We did not go into what these private services would

charge under contracts, or anything of that nature.

Mr. GROSS. Have they not been contracted, have their services not been contracted for by some agency or department of the Government?

Mr. HARRIS. No doubt you will have some of these that are mentioned that perhaps have entered into contracts for specific purposes, but not for technical services as contemplated under this program at all.

Mr. GROSS. For instance, the specific organizations listed at the top of page 26 of the report have not been employed by the Federal Government.

Mr. HARRIS. As to the agencies mentioned on page 26 of the report—which is part of the additional views of some of the committee members—what they are suggesting here is that we should ask more than we are asking in this program. Some of the things mentioned in the additional views we think are a part of the program and are being accepted by these agencies mentioned here.

Mr. GROSS. I understand that, but what I am trying to get at is who paid these organizations for the information that they have apparently already made available?

Mr. HARRIS. The private industries of the United States who obtained their services.

Mr. GROSS. This has been financed then by private industry?

Mr. HARRIS. Yes; and I would say mostly big industry.

Mr. GROSS. I will say that I know that MIT is heavily subsidized through the Federal Government by way of contracts as well as Stanford Research and Arthur T. Little.

Mr. HARRIS. I will say to the gentleman from Iowa that this MIT Associates referred to here is not the MIT educational institution.

Mr. GROSS. I will accept that.

Mr. HARRIS. This is a private agency.

Mr. GROSS. I assumed this was a part of the Massachusetts Institute of Technology.

Mr. HARRIS. Not at all. It is no part of it at all.

Mr. GROSS. Then I withdraw reference to that institution, but I am sure all of these organizations hold Government contracts.

Mr. HARRIS. Neither is the Stanford Research referred to a part of Stanford University. It is not a part of the Stanford University. It just happens to have that name. It is a private organization.

Mr. GROSS. Was the suggestion by the Comptroller General given authority to audit the books and records? Is that taken care of in the bill?

Mr. HARRIS. I can say to the gentleman from Iowa that that was given attention, and had the studied attention of the gentleman from California [Mr. MOSS], a member of the committee, who never lets one of these pass without bringing that to the attention of the committee. That was well taken care of.

Mr. GROSS. I think it is an excellent enterprise on the part of the gentleman from California [Mr. Moss], that he gets that provision written into legislation, and I commend him for it.

I thank the gentleman for yielding.

AMENDMENT OFFERED BY MR. KEITH

Mr. KEITH. Mr. Chairman, I offer an amendment.

The Clerk read as follows:

Amendment offered by Mr. KEITH: On page 23, in line 10, strike out the colon and insert in lieu thereof a period, and strike out lines 11 through 16 and insert in lieu thereof the following:

"(2) The Secretary may pay to the designated agency for each State (not including a designated agency under section 7) for each of the first three years after such agency is designated not to exceed one-half the cost of preparing the five-year plan for such State and its annual technical services programs, except that such payment may not exceed \$25,000 for any such year."

And redesignate the following paragraphs accordingly.

(Mr. KEITH asked and was given permission to revise and extend his remarks.)

Mr. KEITH. Mr. Chairman, all my amendment proposes to do is to require that in the planning phase of this legislation there shall be matching funds on the part of the States. I believe, in the absence of this amendment, some States might embark upon a planning phase, and they would be encouraged to do so even though they had no serious intent or perhaps, even, the capability for undertaking the operational phase of the program. So by requiring participation you would discourage some States and, accordingly, you would save some money.

Secondly, I think that in the absence of a matching fund arrangement there would be less interest on the part of the States than would be the case if they had to provide matching funds. In the absence of such interest, the program when it came to the legislature for support in its operational phase, would not be as well conceived nor as well understood by the local legislatures as would be the case if they had some participation in the planning phase.

Finally, Mr. Chairman, inasmuch as in the first year of the program there is only \$10 million allocated, the money that would be saved by requiring State participation could be rather substantial. The balance would be available for the operation of programs of those States which have already completed their planning.

Mr. Chairman, it has been said that the legislatures are not now in session and for that reason the program would not get off as readily as would otherwise be the case. This is an argument that could be brought up with reference to any of our programs where matching funds are required.

Mr. Chairman, I do not believe that on those grounds alone we should reject this amendment. I think the question is one of political philosophy. The States should participate—should pay their way from the start—and for these reasons, Mr. Chairman, I hope that the House will support the amendment, and will require matching funds in the planning stage of this legislation.

Mr. HARRIS. Mr. Chairman, I rise in opposition to the amendment, and ask unanimous consent that all debate on the amendment close in 5 minutes.

The CHAIRMAN. Is there objection to the request of the gentleman from Arkansas?

Mr. KEITH. Mr. Chairman, reserving the right to object, if we comply with the gentleman's unanimous-consent request there would be no opportunity to rebut any remarks he might make, and I would like to have an opportunity to be able to counter those remarks, perhaps.

The CHAIRMAN. Is there objection to the request of the gentleman from Arkansas?

Mr. KEITH. Mr. Chairman, I object.

Mr. HARRIS. Mr. Chairman, I rise in opposition to the pending amendment, and I hope it will not be adopted.

It has been said, perhaps with some merit, that this Congress goes a long way toward doing something for every segment of our society. This is one time we are trying to do something for business, and as I said in debate earlier in the afternoon, the underlying basis of our whole society is free enterprise, business, and industry of this country. If we do not maintain a sound, strong, and healthy business community then we cannot expect the labor organizations and people in the fields of various segments of our society to be strong and healthy.

Here is something we know: It takes knowledge, technology, and science if we are going to be a success in the business line.

What we are trying to do here is, with a rather small token, to try to do something to help the business of the Nation, making it stronger, so that it can keep up with what is absolutely necessary if we are going to serve all of the people in an expanding economy.

The gentleman's amendment offered here would automatically, in certain of the States, delay the program for as much as 2 years because there are some States in which the legislatures will not be in session. The Governor and the institutions, as well as the designated agencies and the educational institutions of the State, can with this kind of planning funds help devise a program.

We made this a 3-year program. We think it will accomplish its purpose in 3 years, and will put business, industry, and the educational institutions in the various States in the position so that they can carry on themselves. Do not stymie the program by starting off with an amendment that would virtually say it cannot move or accomplish the purposes for which it was designed.

For these reasons I ask that the amendment be defeated.

Mr. SPRINGER. Mr. Chairman, I move to strike out the last word.

Mr. Chairman, I know how deeply the gentleman from Massachusetts feels about his amendment, both in the subcommittee and in the committee. I rather have the feeling his amendment is good, and I will tell you why I think it is good for whatever it may be worth.

In the later stages of the bill, after the first year, so to speak, the first al-

lotment, the funds are matched by the States, but in the planning stages the Federal Government merely gives so much money to the States to set up a plan. It seems to me if a State is interested in setting up a plan involving \$25,000, that they ought to furnish half of the money. I do not visualize States that cannot produce \$12,500 in matching funds, to \$12,500 by the Federal Government in order to get a program underway. If you would put this up to the States and ask them if the Federal Government were to put up \$12,500 to plan it, and at a later stage produce as much as \$500,000 a year in some States, as much as a million dollars in other States, and as much as \$1.5 million in some States, and as much as \$2 million in the large five States, that there would not be any State that would not say "We are willing to put up \$12,500, or half of the \$25,000 for planning."

This is not very much money but the gentleman from Massachusetts apparently has some of those New England precepts that States ought to do something for themselves in the beginning and not just later on—and match funds but they ought to match those funds from the beginning. Personally, that is the kind of integrity I rather admire. Maybe it will not make a great deal of difference whether or not this amendment carries, but the principle which the gentleman from Massachusetts has set out I do think stands for something and for that reason when the matter comes to a vote I personally shall support it.

The CHAIRMAN. The question is on the amendment offered by the gentleman from Massachusetts [Mr. KEITH].

The amendment was rejected.

The CHAIRMAN. The question is on the committee amendment.

The committee amendment was agreed to.

The CHAIRMAN. Under the rule, the Committee will rise.

Accordingly, the Committee rose, and the Speaker having resumed the chair, Mr. Robino, Chairman of the Committee of the Whole House on the State of the Union, reported that that Committee, having had under consideration the bill (H.R. 3420) to promote economic growth by supporting State and regional centers to place the findings of science usefully in the hands of American enterprise, pursuant to House Resolution 548, he reported the bill back to the House with an amendment adopted in Committee of the Whole.

The SPEAKER. Under the rule, the previous question is ordered.

The question is on the amendment.

The amendment was agreed to.

The SPEAKER. The question is on the engrossment and third reading of the bill.

The bill was ordered to be engrossed and read a third time and was read the third time.

The SPEAKER. The question is on the passage of the bill.

The bill was passed.

The title was amended so as to read: "A bill to promote commerce and encourage economic growth by supporting State and interstate programs to place the findings of science usefully in the hands of American enterprise."

A motion to reconsider was laid on the table.

GENERAL LEAVE TO REVISE AND EXTEND

Mr. HARRIS. Mr. Speaker, I ask unanimous consent that all Members who may desire to do so may extend their remarks in the RECORD and include therewith extraneous matter on the bill just passed—H.R. 3420.

The SPEAKER. Without objection, it is so ordered.

There was no objection.

STATE TECHNICAL SERVICES ACT OF 1965

Mr. HARRIS. Mr. Speaker, I ask unanimous consent that the Committee on Interstate and Foreign Commerce be discharged from further consideration of the bill (S. 949) to promote commerce and encourage economic growth by supporting State and regional centers to place the findings of science usefully in the hands of American enterprise, and ask for its present consideration.

The Clerk read the title of the bill.

The SPEAKER. Is there objection to the request of the gentleman from Arkansas?

There was no objection.

The Clerk read the Senate bill, as follows:

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

DECLARATION OF PURPOSE

SECTION 1. That Congress finds that wider diffusion and more effective application of science and technology in business, commerce, and industry are essential to the growth of the economy, to higher levels of employment, and to the competitive position of United States products in world markets. The Congress also finds that the benefits of federally financed research, as well as other research, must be placed more effectively in the hands of American business, enterprise, commerce, and industrial establishments. The Congress further finds that the several States through cooperation with universities, communities, and industries can contribute significantly to these purposes by providing technical services designed to encourage a more effective application of science and technology to both new and established business, commerce, and industrial establishments. The Congress, therefore, declares that the purpose of this Act is to provide a national program of incentives and support for the several States individually and in cooperation with each other in their establishing and maintaining State and regional technical service programs designed to achieve these ends.

DEFINITIONS

SEC. 2. For the purposes of this Act—

(a) "Technical services" means activities or programs designed to enable business, commerce, and industrial establishments to acquire and use scientific and engineering information more effectively through such means as—

(1) analyzing problems of regions and industries to determine new opportunities for applying technology;

(2) preparing and disseminating technical reports, abstracts, computer tapes, microfilm, reviews, and similar scientific or engineering information, including the establishment of State or regional technical information centers for this purpose;

(3) providing a reference service to identify sources of engineering and other scientific expertise; and

(4) sponsoring industrial workshops, seminars, training programs, extension courses, demonstrations, and field visits designed to encourage the more effective application of scientific and engineering information.

(b) "Designated agency" means the institution or agency in each participating State, which has been designated as administrator of the program for such State under section 3 of this Act.

(c) "Qualified institution" means (1) an institution of higher learning with a program leading to degrees in engineering or business administration which is accredited by a nationally recognized accrediting agency or association to be listed by the United States Commissioner of Education, or such an institution which is listed separately after evaluation by the United States Commissioner of Education pursuant to this subsection; or (2) a State agency or a private, nonprofit institution which meets criteria of competence established by the Secretary of Commerce and published in the Federal Register. For the purpose of this subsection the United States Commissioner of Education shall publish a list of nationally recognized accrediting agencies or associations which he determines to be reliable authority as to the quality of engineering or business education or training offered. When the Commissioner determines that there is no nationally recognized accrediting agency or association qualified to accredit such programs, he shall publish a list of institutions he finds qualified after prior evaluation by an advisory committee, composed of persons he determines to be specially qualified to evaluate the training provided under such programs.

(d) "Participating institution" means each qualified institution in a State, which participates in the administration or execution of the State technical services program as provided by this Act.

(e) "Secretary" means the Secretary of Commerce or the official to whom the Secretary has delegated all or part of the authority in this Act.

(f) "State" means one of the States of the United States, the District of Columbia, the Commonwealth of Puerto Rico, or the Virgin Islands.

PLANS AND PROGRAMS

SEC. 3. The Governor or other competent authority of any State which wishes to receive Federal payments under this Act in support of its existing or planned technical services program shall designate, under appropriate State laws and regulations, an institution or agency to administer and coordinate that program and to prepare and submit plans and programs to the Secretary of Commerce for approval under this Act.

SEC. 4. The designated agency shall prepare and submit to the Secretary in accordance with such regulations as he may publish—

(a) At the beginning of each five-year period, a five-year plan which may be revised annually and which shall: (1) outline the technological and economic conditions of the State, taking into account its region, business, commerce, and its industrial potential and identify the major regional and industrial problems; (2) identify the general approaches and methods to be used in the solution of these problems and outline the means for measuring the impact of such assistance on the State or regional economy; and (3) explain the methods to be used in administering and coordinating the program.

(b) An annual technical services program which shall (1) identify specific methods, which may include contracts, for accomplishing particular goals and outline the likely impact of these methods in terms of the five-year plan; (2) contain a detailed

budget, together with procedures for adequate control, fund accounting, and auditing, to assure proper disbursement for funds paid to the State under this Act; and (3) indicate the specific responsibilities assigned to each participating institution in the State.

SEC. 5. The Secretary shall not accept a five-year plan for review and approval under this Act unless the Governor of the State or his designee determines and certifies that the plan is consistent with State policies and objectives; and the Secretary shall not accept an annual technical services program for review and approval under this Act unless the designated agency has, as certified thereto by the Governor or his designee—

(a) invited all qualified institutions in the State to submit proposals for providing technical services under the Act;

(b) coordinated its programs with other States and with other publicly supported activities within the State, as appropriate;

(c) established adequate rules to insure that no officer or employee of the State, the designated agency or any participating institution, shall receive compensation for technical services for which funds are provided under this Act from sources other than his employer and shall not otherwise maintain any private interest in conflict with his public responsibility;

(d) determined that matching funds will be available from State or other non-Federal sources;

(e) determined that such technical services program does not provide a service that is now available or could be made available as practically by private technical services, professional consultants, or private institutions;

(f) planned no services specially related to a particular firm or company, public work, or other capital project except insofar as the services are of general concern to the industry and commerce of the community, State, or region;

(g) provided for making public all reports prepared in the course of furnishing technical services supported under this Act or for making them available at cost to any person on request.

APPROVAL BY SECRETARY OF COMMERCE

SEC. 6. The Secretary shall review each 5-year plan and each annual program submitted by the designated agency under section 4, or by the regional or interstate institution under section 7, and shall approve only those which (1) bear the certification required by the Governor or his designee under section 5; (2) comply with regulations and meet criteria that the Secretary shall promulgate and publish in the Federal Register; and (3) otherwise accomplish the purposes of this Act.

REGIONAL OR INTERSTATE PROGRAMS

SEC. 7. Two or more States may cooperate in administering and coordinating their plans and programs supported under this Act, in which event all or part of the sums authorized and payable under section 11 to all of the cooperating States may be paid to the institutions or persons authorized to receive them under the terms of the agreement between the cooperating States. When the cooperative agreement designates a regional or interstate institution to act on behalf of all of the cooperating States, it shall submit to the Secretary for review and approval under section 6 a regional or interstate five-year plan and annual regional or interstate technical services program which, as nearly as practicable, shall meet the requirements of section 4 and section 5.

SEC. 8. Notwithstanding the provisions of section 11, the Secretary is authorized to increase by 10 per centum the amount which he approves for any regional or interstate technical services program submitted under section 7. Such additional amount

may be paid without requiring matching funds from State or non-Federal sources.

SEC. 9. (a) The consent of the Congress is given to any two or more States to enter into agreements or compacts, not in conflict with any law of the United States, for cooperative efforts and mutual assistance in establishing regional or interstate institutions under section 7 for accomplishing the purposes of this Act.

(b) The right to alter, amend, or repeal this section, or any consent granted pursuant to this section, is expressly reserved.

ADVISORY COUNCIL

SEC. 10. Each designated agency and each regional or interstate institution shall appoint an advisory council for technical services, the members of which shall represent broad community interests and shall be qualified to evaluate programs submitted under section 4. The advisory council shall review each annual program, evaluate its relation to the purposes of this Act, and report its findings to the designated agency and the Governor or his designee. Each report of the advisory council shall be available to the Secretary on request.

ADMINISTRATION AND PAYMENTS

SEC. 11. There is authorized to be appropriated for the purposes of this Act, \$10,000,000 for the fiscal year ending June 30, 1966; \$20,000,000 for the fiscal year ending June 30, 1967; \$30,000,000 for the fiscal year ending June 30, 1968; \$40,000,000 for the fiscal year ending June 30, 1969; and \$40,000,000 for the fiscal year ending June 30, 1970.

(a) From these amounts, the Secretary is authorized to make an annual payment to each designated agency, regional or interstate institution, or person authorized to receive payments in support of each approved technical services program. Maximum amounts which may be paid to the States under this subsection shall be fixed in accordance with regulations which the Secretary shall promulgate and publish in the Federal Register from time to time, considering (1) population according to the last decennial census; (2) business, commercial, industrial and economic development and productive efficiency; and (3) technical resources.

(b) The Secretary may reserve an amount equal to not more than 20 per centum of the total amount appropriated each year under this section and is authorized to make payments to any designated agency or participating institution for technical services programs which he determines have special merit or to any qualified institution for additional programs which he determines are necessary to accomplish the purposes of this Act, under criteria and regulations that he shall promulgate and publish in the Federal Register.

(c) An amount equal to not more than 5 per centum of the total amount appropriated each year under this section shall be available to the Secretary for the direct expenses of administering this Act.

(d) No amount paid under subsection (a) shall exceed one-half of the cost of the approved annual technical services program of the State, and for each dollar paid under subsections (a) and (b) there shall be available for expenditure on each approved program at least \$1 from State or other non-Federal sources: *Provided*, That the Secretary may pay an amount not to exceed \$25,000 a year for each of the first three fiscal years to each designated agency to assist in the preparation of the first five-year plan and the initial annual technical services programs, without regard to any requirement of this section.

(e) At the end of each fiscal year, all remaining amounts which are appropriated for payments to the States under subsection (a) and which have not been obligated for payments to the States at that time, shall be

available to the Secretary for payments under subsection (b), until expended.

SEC. 12. The Secretary is authorized and directed to aid the States and regions in carrying out their technical services programs by providing reference services which a State or region may use to obtain scientific, technical, and engineering information from sources outside the State or region, for the purposes of this Act.

SEC. 13. The Secretary is authorized to establish such policies, standards, criteria, and procedures and to prescribe such rules and regulations as he may deem necessary or appropriate for the administration of this Act.

LIMITATIONS

SEC. 14. (a) Nothing contained in this Act shall be construed as authorizing a department, agency, officer, or employee of the United States to exercise any direction, supervision, or control over, or impose any requirements or conditions with respect to the personnel, curriculum, methods of instructions, or administration of any educational institution.

(b) Nothing contained in this Act shall be deemed to affect the functions or responsibilities under law of any other department or agency of the United States.

EVALUATION

SEC. 15. Within five years from the date of the approval of this Act, and prior to the end of each five-year period thereafter, the Secretary shall appoint a public committee, none of the members of which shall have been directly concerned with the preparation of plans, administration of programs or participation in programs under this Act. The Committee shall evaluate the significance and impact of the program under this Act and make recommendations concerning the program. A report shall be transmitted to the Secretary within sixty days after the end of each five-year period.

ANNUAL REPORT

SEC. 16. (a) Each designated agency or regional or interstate institution shall make an annual report to the Secretary on or before the first day of September of each year on the work accomplished under the technical services program and the status of current services, together with a detailed statement of the amounts received under any of the provisions of this Act during the preceding fiscal year, and of their disbursement.

(b) The Secretary shall make a complete report with respect to the administration of this Act to the President and the Congress not later than January 31 following the end of each fiscal year for which amounts are appropriated pursuant to this Act.

TERMINATION

SEC. 17. Whenever the Secretary, after reasonable notice and opportunity for hearing to any agency or institution receiving funds under this Act finds that—

(a) the agency or institution is not complying substantially with the provisions of this Act, with the regulations promulgated by the Secretary or with the approved annual technical services program; or

(b) any funds paid to the agency or institution under the provisions of this Act have been lost, misapplied, or otherwise diverted from the purposes for which they were paid or furnished—

the Secretary shall notify such agency or institution that no further payments will be made under the provisions of this Act until he is satisfied that there is substantial compliance or the diversion has been corrected, or, if compliance or correction is impossible, until such agency or institution repays or arranges for the repayment of Federal funds which have been diverted or improperly expended.

SEC. 18. Upon notice by the Secretary to any agency or institution that no further

payments will be made pending substantial compliance correction or repayment under section 17, any funds which may have been paid to such agency or institution under this Act and which are not expended by the agency or institution on the date of such notice, shall be repaid to the Secretary and be deposited to the account of the appropriations from which they originally were paid.

SHORT TITLE

SEC. 19. This Act may be cited as the "State Technical Services Act of 1965".

AMENDMENT OFFERED BY MR. HARRIS

Mr. HARRIS. Mr. Speaker, I offer an amendment.

The Clerk read as follows:

Amendment offered by Mr. HARRIS: Strike out all after the enacting clause of S. 949 and insert the provisions of H.R. 3420, as just passed.

The amendment was agreed to.

The Senate bill was ordered to be read a third time, was read the third time, and passed, and a motion to reconsider was laid on the table.

Mr. HARRIS. Mr. Speaker, I ask unanimous consent that the title of the Senate bill (S. 949) to promote commerce and encourage economic growth by supporting State and regional centers to place the findings of science usefully in the hands of American enterprise, may be amended to conform with the title of the House bill, H.R. 3420.

The SPEAKER. Is there objection to the request of the gentleman from Arkansas?

Mr. SPRINGER. Mr. Speaker, reserving the right to object, is the purpose of this request to substitute the House bill for the Senate bill and send it back to the Senate for a vote?

Mr. HARRIS. The purpose is to insert the provisions of the House-passed bill in the Senate bill and return it to the Senate for its consideration and whatever action it cares to take.

The SPEAKER. Is there objection to the request of the gentleman from Arkansas?

There was no objection.

The title was amended so as to read: "A bill to promote commerce and encourage economic growth by supporting State and interstate programs to place the findings of science usefully in the hands of American enterprise."

A similar House bill, H.R. 3420, was laid on the table.

GENERAL LEAVE

Mr. HARRIS. Mr. Speaker, I ask unanimous consent that all Members may have 5 legislative days in which to extend their remarks in the Record on the bill just passed.

The SPEAKER. Is there objection to the request of the gentleman from Arkansas?

There was no objection.

HOOR OF MEETING TOMORROW

Mr. ALBERT. Mr. Speaker, I ask unanimous consent that when the House adjourns today it adjourn to meet at 11 o'clock tomorrow.

The SPEAKER. Is there objection to the request of the gentleman from Oklahoma?

There was no objection.

DIGEST of Congressional Proceedings

OF INTEREST TO THE DEPARTMENT OF AGRICULTURE

UNITED STATES DEPARTMENT OF AGRICULTURE
WASHINGTON, D.C. 20250
OFFICIAL BUSINESS

POSTAGE AND FEES PAID
U. S. DEPARTMENT OF AGRICULTURE

OFFICE OF BUDGET AND FINANCE
INFORMATION ONLY;
TO BE QUOTED OR CITED)

Issued Sept. 8, 1965
For actions of Sept. 7, 1965
89th-1st; No. 164

CONTENTS

Aging.....3	Foreign aid.....18,24	Meats.....29
Appropriations.....3,23,24	Foreign service.....23	Military construction...12
Balance of payments.....26	Foreign trade.....8	Milk.....17
CCC.....12	Forestry.....7,10	Natural resources.....27
Cooperatives.....18	4-H Clubs.....20	Nomination.....6
Cotton.....1,16	Fruits and vegetables...11	Organization.....14
Credit.....18	Geothermal steam.....2	Personnel.....14
Copyrights.....15	Information.....4	Reclamation.....13
Data Processing.....21	Lands.....2	Transportation.....5
Electrification.....18	Legislative program...9,23	Water resources.....19,25
Farm labor.....3	Livestock.....29	Watersheds.....22
Farm program.....1	Marketing orders.....11,17	Wheat sales.....8,28

HIGHLIGHTS: Senate committee reported farm bill. Sen. Kuchel criticized Senate committee action on cotton provision of farm bill. Sen. Young, O., spoke in favor of trade with Russia. Reps. Whitener, Cooley, and others criticized cotton provisions of Senate farm bill. Sen. Symington submitted and discussed measure to authorize investigation of the legality of shipping restrictions on wheat.

SENATE

1. FARM PROGRAM. Reported with amendment H. R. 9811, the farm bill (S. Rept. 687) (p. 22073). This bill was made the unfinished business (p. 22098).
Sen. Kuchel criticized the "two-price system as called for in the Senate committee bill" regarding cotton and stated "we are going to have to continue and strengthen and improve the one-price system." pp. 22099-100
2. LANDS. Passed as reported S. 1674, to authorize the Secretary of the Interior to make disposition of geothermal steam and associated geothermal resources

from certain public lands. pp. 22067-73

3. APPROPRIATIONS. Passed as reported H. R. 10586, making supplemental appropriations to the Labor and HEW Departments. Conferees were appointed. House conferees have not been appointed (pp. 22092-93). This bill includes: \$1,723,000 for the Labor Dept. for activities relating to admission and employment of foreign agricultural workers, and \$7,000,000 for the new Administration on Aging in HEW.
4. INFORMATION. Concurred in House amendments to S. 949, to authorize the Department of Commerce to institute a 3-year program of matching grants to States in a cooperative effort to disseminate the findings of science and technology throughout American business, commerce, and industrial establishments as a means of promoting industrial and economic growth (pp. 22094-97). This bill will now be sent to the President.
5. TRANSPORTATION. Conferees were appointed on S. 1588, to authorize the Secretary of Commerce to undertake research and development in high-speed ground transportation (pp. 22097-98). House conferees have not been appointed.
6. NOMINATION. Confirmed the nomination of Ralph K. Huitt to be an Assistant Secretary of Health, Education, and Welfare. p. 22059
7. FORESTRY. Sen. Mondale spoke in support of the bill to establish the Saint Croix National Scenic Waterway in Minn. and Wisc. p. 22088
8. FOREIGN TRADE. Sen. Young, Ohio, spoke in favor of removing the 50% shipping restriction on wheat sales to Iron Curtain countries, and Sen. Magnuson stated he "hoped that something may be worked out to the end that the American merchant marine might carry more of these shipments of wheat." pp. 22094
9. LEGISLATIVE PROGRAM. Sen. Mansfield stated that the bill to establish the St. Croix National Scenic Waterway and the bill to provide certain increases in retirement and disability annuities may be considered on Wed. p. 22099

HOUSE

10. FORESTRY. Passed with amendment S. 7, to authorize the Secretary of Agriculture to establish the Spruce Knob-Seneca Rocks National Recreation Area as a part of the Monongahela National Forest, W. Va., after substituting the language of a similar bill, H. R. 10330, which had been passed earlier as reported. H. R. 10330 was tabled. pp. 22109-12, 22165-6
Passed without amendment H. R. 10366, to provide for the establishment of the Mount Rogers National Recreation Area in the Jefferson National Forest, Va. pp. 22112-3
Passed as reported S. 1689, to authorize the Secretary of Agriculture to hire or rent property from employees of the Forest Service for the use of that Service, whenever in the public interest, and provides that the Secretary shall transmit to the House and Senate Committees on Agriculture a statement of rental under this authority after the end of each fiscal year (the bill removes present requirements that the property must be for use by an employee other than the employee from whom hired or rented and that the aggregate amount paid an employee shall not exceed \$3,000 in any year). p. 22105
Passed over without prejudice, at the request of Rep. Johnson, Pa., S. 1764, to authorize the acquisition of approximately 10,000 acres of land within the boundaries of the Uinta National Forest, Utah. pp. 22105-6

bill as so amended be regarded for the purpose of amendment as original text, provided that no point of order shall be considered to have been waived by reason of agreement to this order.

THE PRESIDING OFFICER. Is there objection? The Chair hears none, and it is so ordered.

The amendments agreed to en bloc are as follows.

On page 3, line 17, after the word "Act", to strike out "\$967,000,000" and insert "\$1,151,000,000"; in line 18, after the word "which", to strike out "\$775,000,000" and insert "\$959,000,000"; and, in line 22, after the word "of", to strike out "the amount authorized to be appropriated for such title" and insert "\$1,070,684,000".

On page 5, line 20, after the word "Sciences", to strike out "\$2,200,000" and insert "\$4,550,000".

On page 6, line 3, after the word "Institute", to strike out "\$4,000,000" and insert "\$5,150,000".

On page 6, line 6, to strike out "\$9,800,000" and insert "\$5,050,000".

On page 6, line 10, after the word "Blindness", to strike out "\$4,250,000" and insert "\$5,500,000".

On page 7, after line 12, to insert:

"GENERAL PROVISION"

"SEC. 201. The provisions of section 207 of the Department of Health, Education, and Welfare Appropriation Act, 1966, Public Law 89-156, shall apply to the items contained in this chapter."

LABOR-HEW SUPPLEMENTAL BILL IMPLEMENTS IMPORTANT GREAT SOCIETY PROGRAMS

Mr. YARBOROUGH. Mr. President, I wish to commend the distinguished chairman of the subcommittee [Mr. HILL] for the great service he is rendering in giving this bill the usual thorough and thoughtful consideration which he and his subcommittee give all bills which come before them and yet still bringing the Labor-HEW supplemental to the floor of the Senate only 2 weeks after it passed the House.

This is a very important appropriation bill, Mr. President, because in it Congress is appropriating funds for many of the Great Society programs which Congress has studied this year and authorized in this 1st session of the 89th Congress.

The sum of \$1,151 million is recommended for the first year implementation of the Elementary and Secondary Education Act. The authorization for title I payments to school districts for the purpose of improving the educations of educationally deprived children from low-income families is increased over the House figure by the amount requested by the administration, \$184 million.

Moreover, the committee has provided that payments to a given school district can be made on the basis of \$1,070,684,000 if the school district can justify the full amount it would have coming to it under this total. Although this is \$100 million less than the full authorization, it is the amount requested for this purpose by the President. In view of the fact that school has already started and part of the fiscal year has already elapsed, this slightly lower amount is reasonable.

I hope that the full amount authorized for strengthening State departments of education under title V of the act, can be restored in future appropriations. Ele-

mentary and secondary education is primarily a local and State matter, and with a revival of interest in multistate action as a result of the work of Dr. James Bryant Conant, we should take every opportunity to aid the States in upgrading education at the elementary and secondary level.

The \$20,250,000 expenditure authorized for the National Institutes of Health will provide funds for implementing many of the recommendations of the President's Council on Heart Disease, Cancer, and Stroke. As a member of the subcommittee on Health of the Labor and Public Welfare Committee, I studied this report closely in connection with the Heart, Cancer, Stroke Amendments of 1965. Much of the thrust of this report is aimed at the problem of utilizing the knowledge turned up by our researchers. The best medical research in the world is worth nothing if we do not put its results into practice. The committee has acted wisely in reallocating funds among the various NIH programs to give higher priority to those programs which deal with getting the new medical knowledge out to the practicing physician. Research and implementation of the resultant knowledge go hand in hand; we can neglect neither. However the gap which exists at the present time in certain fields between the discovery of new things and the use we are making of these discoveries is so critical that justification exists for paying special attention to putting our newly discovered knowledge to work.

THE PRESIDING OFFICER. The bill is open to further amendment. If there be no further amendment to be proposed, the question is on the engrossment of the amendments and the third reading of the bill.

The amendments were ordered to be engrossed, and the bill to be read a third time.

The bill was read the third time.

THE PRESIDING OFFICER. The bill having been read the third time, the question is, Shall it pass?

The bill (H.R. 10586) was passed.

Mr. HILL. Mr. President, I move that the Senate insist on its amendments, and request a conference with the House thereon, and that the Chair appoint the conferees on the part of the Senate.

The motion was agreed to; and the Presiding Officer appointed Mr. PASTORE, Mr. HILL, Mr. HOLLAND, Mr. HAYDEN, Mr. RUSSELL of Georgia, Mr. YOUNG of North Dakota, Mr. SALTONSTALL, and Mr. COTTON conferees on the part of the Senate.

Mr. HILL. Mr. President, I move that the Senate reconsider the vote by which the bill (H.R. 10586) was passed.

Mr. ALLOTT. Mr. President, I move to lay that motion to the table.

The motion to lay on the table was agreed to.

Mr. COOPER. Mr. President, I have received inquiries concerning the location of vocational training centers. Would this bill have anything to do with that subject?

Mr. HILL. This bill does not deal with that subject. H.R. 10586 is a supplemental appropriation bill, and would not

have anything to do with the provisions of funds for such centers.

A distinguished Representative from Kentucky is also interested in one of these schools.

**LET US END THIS INJUSTICE—
AMENDMENT OF INTERNATIONAL
CLAIMS SETTLEMENT ACT**

Mr. YOUNG of Ohio. Mr. President, pending on the Senate Calendar is S. 1935, proposed by the administration to amend the International Claims Settlement Act in connection with, among other things, the disposition of funds deposited in the U.S. Treasury by the Government of Italy to pay claims of Americans who suffered as the result of the fighting in Italy during World War II.

More than a million dollars remain in the fund, and this proposal would reopen the claims program. A suggestion was made during the hearings before the Senate Foreign Relations Committee of an inequity which occurred during the Foreign Claims Settlement Commission's earlier consideration of personal injury claims, and which a representative of the Commission acknowledged, but which could not previously have been cured because of the absence of congressional authority for further action on Italian claims.

What happened was that two Americans to my knowledge in the same situation were treated differently. The man whose claim was disallowed, Carl Hauss of Cincinnati, Ohio, fought valiantly against the Italian Fascists, and was arrested by them near Milan, Italy, after the armistice. Both the agreement with Italy under which the funds were deposited in the U.S. Treasury, and the legislation providing for the payment of claims, provided for payment of claims of this type, and yet, despite the suffering of Mr. Hauss in the cause of the Allies, his claim was not allowed, while others in the same situation were allowed and compensation was provided.

I know personally, having served with the U.S. Army in northern Italy during World War Two, of the continuing participation of the Italian Fascist forces in combat in Italy there after the armistice was signed in 1943 and Italy officially was out of the war. I know of the activities of the partisans against the Fascists thereafter. It would be most unfortunate if Americans who were injured or suffered property damage in Italy could not be compensated from the fund provided by Italy for that very purpose.

A million dollars remains in that fund and I know of no reason for not providing such compensation. The International Law Committee of the District of Columbia Bar Association took this position in connection with this legislation which was proposed but not acted upon in the last Congress, and I ask unanimous consent to have printed at this point in the Record a copy of its resolution.

There being no objection, the resolution was ordered to be printed in the Record, as follows:

MINUTES OF THE MEETING OF THE COMMITTEE ON INTERNATIONAL LAW OF THE DISTRICT OF COLUMBIA, HELD FEBRUARY 13, 1964, IN THE BOARD ROOM OF THE NATIONAL SAVINGS & TRUST CO.

Mr. Herman moved the adoption of the resolution and the motion was seconded. After a full discussion, the resolution was unanimously adopted and the chairman was authorized and instructed to deliver a copy of the resolution and a report of the action of the Committee to the Board of Directors of the Bar Association of the District of Columbia with a recommendation that the resolution be approved by the board and that appropriate further action be taken to communicate the position of the Bar Association of the District of Columbia to the Committee on Foreign Relations of the U.S. Senate. The other matter involved S. 947 (proposed legislation relative to the Italian Claims Fund established by the Government of Italy for the payment of claims of U.S. nationals arising out of the war). The following resolution was moved and seconded:

"RESOLUTION

"Whereas the Senate Foreign Relations Committee is considering S. 947, one provision of which would pay over the balance of the Italian Claims Funds to the U.S. Treasury toward prisoner of war and detention payments made from other funds; and

"Whereas said fund was provided under international agreement the terms of which allowed the use of the fund only for the payment of claims not otherwise provided for; and

"Whereas there appear to be claims of American citizens not provided for, which should be given consideration by the Congress: Now, therefore, be it

"Resolved, That this matter should be called to the attention of the Senate Foreign Relations Committee in its consideration of S. 947, and that a member of the international law committee be authorized to present this situation at any hearings to be held on this legislation."

Mr. YOUNG of Ohio. Mr. President, a reexamination of this matter is clearly in order. Although it may not be practical at the end of this session for the Senate to debate the question, I hope that when either the legislation is considered by the House of Representatives or in connection with private legislation to provide for the payment of worthy cases out of the balance of the Italian Claims Fund, full consideration can be given to the inequity which occurred to these brave Americans who risked so much for the cause of freedom, and suffered so much as a result. The authority exists under the basic legislation and the funds are available without utilizing taxpayers' money. All that is required is for the Congress to authorize the procedure for the consideration of the claims.

**COSTLY SHORTSIGHTEDNESS—
TRADE WITH IRON CURTAIN
COUNTRIES**

Mr. YOUNG of Ohio. Mr. President, our neighbor to the north, Canada, is prospering as never before. Adding somewhat to her general prosperity is the fact that so far this year 187 million bushels of Canadian wheat have been sold and shipped to the Soviet Union for which Canadian wheatgrowers received \$450 million in gold. Last year 239 million bushels of Canadian wheat were shipped to the Soviet Union for which

Canadian wheatgrowers received more than \$500 million in gold.

I have maintained all along that right-wing extremists are doing a disservice to their fellow Americans when they shrilly denounce having any commercial relations with the Russians. Of course, we should sell behind the Iron Curtain whatever products of American farms and factories the Russians can eat, drink or smoke or wear. Nevertheless, right-wing extremists shudder at the thought of this.

These shortsighted, superduper patriots, who consider themselves self-appointed vigilantes and who seek to play God with other people's patriotism, declaim against any trade whatsoever with countries behind the Iron Curtain—Rumania, Poland, or any other countries.

Mr. President, we have the great St. Lawrence Seaway, of which we are very proud, which we are not using to maximum capacity by any means.

The farmers and the industrialists of the Midwest are very proud that so many of our States have ocean ports. In my State of Ohio, we have the cities of Lorain, Cleveland, Ashtabula, Conneaut, and Toledo, which can handle ocean freight. Ships belonging to the Scandinavian countries, Germany, and many other countries can come to those cities, via the St. Lawrence Seaway, with products for the United States, and are available to take on wheat and other products of the Midwest.

Millions of bushels of wheat are rotting in storage bins in this country, gradually becoming nothing except food for rats, while the taxpayers of our country are paying huge sums of money for storage costs. This wheat is being held against sales for cash on the barrel. This is what our good neighbor to the north, Canada, is doing, and the same as West Germany is doing. Both of these nations are prospering as never before. Sometimes West Germany buys wheat from our country—sometimes not as much as we would like to sell her—and converts it into flour and sells it behind the Iron Curtain.

There is a restriction on U.S. sales of surplus wheat to Communist nations, namely, that 50 percent of such sales shall be carried in American bottoms. This is discriminatory against the farmers of the Midwest and against the manufacturers of our entire country.

Mr. President, it is high time to put an end to this costly shortsightedness. Let us follow the example of the Commonwealth to the north. Let us follow the example of other allies, such as Australia, which sells wheat behind the Iron Curtain, and West Germany, which sells wheat products to Communist bloc countries.

Let us try to stimulate the business of the great St. Lawrence Seaway and add further to the prosperity of American farmers and producers. Let us at the same time deserve the blessings of the taxpayers of the country for engaging in trade and selling freely to the nationals behind the Iron Curtain the products that they need—and they need wheat very much at the present time—

products that they can eat, smoke, drink or wear.

We owe it to our children and our grandchildren to continue to seek cooperation in this nuclear age, for the choice may someday be limited to cooperation or coannihilation.

I hope that we shall give serious thought to putting an end to our costly shortsightedness that is depriving American farmers and producers of money which they would otherwise have and placing an unnecessary burden on the taxpayers of this country.

Mr. MAGNUSON subsequently said: Mr. President, I listened with considerable interest to the Senator from Ohio making the objective with reference to the so-called 50-50 cargo maritime preference program. I heard only part of his speech.

Much has been said in the past few days regarding the program, which is of great importance to the American merchant marine in relation to the wheat program. I hope some solution can be worked out.

There are two sides to the question, and at the proper time, those of us who have a complete understanding of the necessity to keep our merchant marine alive and adequate, economic and defensewise, will work out what we can. We believe that our merchant marine should not be jeopardized or weakened. It has enough troubles now.

When it is remembered that American bottoms now carry only 8 percent in tonnage of our exports and imports over the world, it seems to me it is high time something be done to strengthen it. It is hoped that something may be worked out to the end that the American merchant marine might carry more of these shipments of wheat.

**STATE TECHNICAL SERVICES ACT
OF 1965**

Mr. MAGNUSON. Mr. President, I ask that the Chair lay before the Senate the amendments of the House of Representatives to Senate bill 949.

The PRESIDING OFFICER laid before the Senate the amendments of the House of Representatives to the bill (S. 949) to promote commerce and encourage economic growth by supporting State and regional centers to place the findings of science usefully in the hands of American enterprise, which were, to strike out all after the enacting clause and insert:

DECLARATION OF PURPOSE

SECTION 1. That Congress finds that wider diffusion and more effective application of science and technology in business, commerce, and industry are essential to the growth of the economy, to higher levels of employment, and to the competitive position of United States products in world markets. The Congress also finds that the benefits of federally financed research, as well as other research, must be placed more effectively in the hands of American business, commerce, and industrial establishments. The Congress further finds that the several States through cooperation with universities, communities, and industries can contribute significantly to these purposes by providing technical services designed to encourage a more effective application of science and technology

to both new and established business, commerce, and industrial establishments. The Congress, therefore, declares that the purpose of this Act is to provide a national program of incentives and support for the several States individually and in cooperation with each other in their establishing and maintaining State and interstate technical service programs designed to achieve these ends.

DEFINITIONS

SEC. 2. For the purposes of this Act—

(a) "Technical services" means activities or programs designed to enable businesses, commerce, and industrial establishments to acquire and use scientific and engineering information more effectively through such means as—

(1) preparing and disseminating technical reports, abstracts, computer tapes, microfilm, reviews, and similar scientific or engineering information, including the establishment of State or interstate technical information centers for this purpose;

(2) providing a reference service to identify sources of engineering and other scientific expertise; and

(3) sponsoring industrial workshops, seminars, training programs, extension courses, demonstrations, and field visits designed to encourage the more effective application of scientific and engineering information.

(b) "Designated agency" means the institution or agency which has been designated as administrator of the program for any State or States under section 3 or section 7 of this Act.

(c) "Qualified institution" means (1) an institution of higher learning with a program leading to a degree in science, engineering, or business administration which is accredited by a nationally recognized accrediting agency or association to be listed by the United States Commissioner of Education, or such an institution which is listed separately after evaluation by the United States Commissioner of Education pursuant to this subsection; or (2) a State agency or a private, nonprofit institution which meets criteria of competence established by the Secretary of Commerce and published in the Federal Register. For the purpose of this subsection the United States Commissioner of Education shall publish a list of nationally recognized accrediting agencies or associations which he determines to be reliable authority as to the quality of science, engineering, or business education or training offered. When the Commissioner determines that there is no nationally recognized accrediting agency or association qualified to accredit such programs, he shall publish a list of institutions he finds qualified after prior evaluation by an advisory committee, composed of persons he determines to be specially qualified to evaluate the training provided under such programs.

(d) "Participating institution" means each qualified institution in a State, which participates in the administration or execution of the State technical services program as provided by this Act.

(e) "Secretary" means the Secretary of Commerce.

(f) "State" means one of the States of the United States, the District of Columbia, the Commonwealth of Puerto Rico, or the Virgin Islands.

(g) "Governor", in the case of the District of Columbia, means the Board of Commissioners of the District of Columbia.

SELECTION OF DESIGNATED AGENCY

SEC. 3. The Governor of any State which wishes to receive Federal payments under this Act in support of its existing or planned technical services program shall designate, under appropriate State laws and regulations, an institution or agency to administer and coordinate that program and to prepare and submit a plan and programs to the Sec-

retary of Commerce for approval under this Act.

PLANS AND PROGRAMS

SEC. 4. The designated agency shall prepare and submit to the Secretary in accordance with such regulations as he may publish—

(a) A five-year plan which may be revised annually and which shall: (1) outline the technological and economic conditions of the State, taking into account its region, business, commerce, and its industrial potential and identify the major regional and industrial problems; (2) identify the general approaches and methods to be used in the solution of these problems and outline the means of measuring the impact of such assistance on the State or regional economy; and (3) explain the methods to be used in administering and coordinating the technical services program.

(b) An annual technical services program which shall (1) identify specific methods, which may include contracts, for accomplishing particular goals and outline the likely impact of these methods in terms of the five-year plan; (2) contain a detailed budget, together with procedures for adequate fiscal control, fund accounting, and auditing, to assure proper disbursement for funds paid to the State under this Act; and (3) indicate the specific responsibilities assigned to each participating institution in the State.

REVIEW OF PLANS AND PROGRAMS BY SECRETARY

SEC. 5. The Secretary shall not accept the five-year plan of a State for review and approval under this Act unless the Governor of the State or his designee determines and certifies that the plan is consistent with State policies and objectives; and the Secretary shall not accept an annual technical services program for review and approval under this Act unless the designated agency has, as certified thereto by the Governor or his designee—

(a) invited all qualified institutions in the State to submit proposals for providing technical services under the Act;

(b) coordinated its programs with other States and with other publicly supported activities within the State, as appropriate;

(c) established adequate rules to insure that no officer or employee of the State, the designated agency, or any participating institution, shall receive compensation for technical services he performs, for which funds are provided under this Act, from sources other than his employer, and shall not otherwise maintain any private interest in conflict with his public responsibility;

(d) determined that matching funds will be available from State or other non-Federal sources;

(e) determined that such technical services program does not provide a service which on the date of such certification is economically and readily available in such State from private technical services, professional consultants, or private institutions;

(f) planned no services specially related to a particular firm or company, public work, or other capital project except insofar as the services are of general concern to the industry and commerce of the community, State, or region;

(g) provided for making public all reports prepared in the course of furnishing technical services supported under this Act or for making them available at cost to any person on request.

APPROVAL BY SECRETARY

SEC. 6. The Secretary shall review the five-year plan and each annual program submitted by a designated agency under section 4 or section 7, and shall approve only those which (1) bear the certification required by the Governor or his designee under section 5; (2) comply with regulations and meet criteria that the Secretary shall promulgate

and publish in the Federal Register; and (3) otherwise accomplish the purposes of this Act.

INTERSTATE PROGRAMS

SEC. 7. Two or more States may cooperate in administering and coordinating their plans and programs supported under this Act, in which event all or part of the sums authorized and payable under section 10 to all of the cooperating States may be paid to the designated agency, participating institutions, or persons authorized to receive them under the terms of the agreement between the cooperating States. When the cooperative agreement designates an interstate agency to act on behalf of all of the cooperating States, it shall submit to the Secretary for review and approval under section 6 an interstate five-year plan and an annual interstate technical services program which, as nearly as practicable, shall meet the requirements of section 4 and section 5.

CONSENT OF CONGRESS

SEC. 8. (a) The consent of the Congress is given to any two or more States to enter into agreements or compacts, not in conflict with any law of the United States, for cooperative efforts and mutual assistance and in designating agencies, under section 7, for accomplishing the purposes of this Act.

(b) The right to alter, amend, or repeal this section, or consent granted by this section, is expressly reserved.

ADVISORY COUNCIL

SEC. 9. Each designated agency shall appoint an advisory council for technical services, the members of which shall represent broad community interests and shall be qualified to evaluate programs submitted under section 4. The advisory council shall review each annual program, evaluate its relation to the purposes of this Act, and report its findings to the designated agency and the Governor or his designee. Each report of each advisory council shall be available to the Secretary on request. Members of any such advisory council shall not be compensated for serving as such, but may be reimbursed for necessary expenses incurred by them in connection with attending meetings of any advisory council of which they are members.

AUTHORIZATION OF APPROPRIATIONS AND PAYMENTS

SEC. 10. (a) There are authorized to be appropriated for the purposes of this Act, \$10,000,000 for the fiscal year ending June 30, 1966; \$20,000,000 for the fiscal year ending June 30, 1967; \$30,000,000 for the fiscal year ending June 30, 1968.

(b) From these amounts, the Secretary is authorized to make an annual payment to each designated agency, participating institution, or person authorized to receive payments in support of each approved technical services program. Maximum amounts which may be paid to the States under this subsection shall be fixed in accordance with regulations which the Secretary shall promulgate and publish in the Federal Register from time to time, considering (1) population according to the last decennial census; (2) business, commercial, industrial and economic development and productive efficiency; and (3) technical resources.

(c) The Secretary may reserve an amount equal to not more than 20 per centum of the total amount appropriated for each year under this section and is authorized to make payments from such amount to any designated agency or participating institution for technical services programs which he determines have special merit or to any qualified institution for additional programs which he determines are necessary to accomplish the purposes of this Act, under criteria and regulations that he shall promulgate and publish in the Federal Register.

(d) An amount equal to not more than 5 per centum of the total amount appropriated each year under this section shall be available to the Secretary for the direct expenses of administering this Act.

(e) (1) No amount paid for any technical services program under subsection (b) or (c) shall exceed the amount of non-Federal funds expended to carry out such program: *Provided*, That the Secretary may pay an amount not to exceed \$25,000 a year for each of the first three fiscal years to each designated agency, other than a designated agency under section 7, to assist in the preparation of the five-year plan and the initial annual technical services programs, without regard to any of the preceding requirements of this section.

(2) No funds appropriated pursuant to the provisions of this section shall be paid to any designated agency, participating institution, or person on account of any such agency or institution, to carry out any technical services activity or program in any State if such activity or program duplicates any activity or program readily available in such State from Federal or State agencies, including publicly supported institutions of higher learning in such State.

ASSISTANCE BY THE SECRETARY

SEC. 11. The Secretary is authorized and directed to aid designated agencies in carrying out their technical services programs by providing reference services which a designated agency may use to obtain scientific, technical, and engineering information from sources outside the State or States which it serves, for the purposes of this Act.

RULES AND REGULATIONS

SEC. 12. The Secretary is authorized to establish such policies, standards, criteria, and procedures and to prescribe such rules and regulations as he may deem necessary or appropriate for the administration of this Act.

LIMITATIONS

SEC. 13. (a) Nothing contained in this Act shall be construed as authorizing a department, agency, officer, or employee of the United States to exercise any direction, supervision, or control over, or impose any requirements or conditions with respect to the personnel, curriculum, methods of instruction, or administration of any educational institution.

(b) Nothing contained in this Act shall be deemed to affect the functions or responsibilities under law of any other department or agency of the United States.

ANNUAL REPORT

SEC. 14. (a) Each designated agency shall make an annual report to the Secretary on or before the first day of September of each year on the work accomplished under the technical services program and the status of current services, together with a detailed statement of the amounts received under any of the provisions of this Act during the preceding fiscal year, and of their disbursement.

(b) The Secretary shall make a complete report with respect to the administration of this Act to the President and the Congress not later than January 31 following the end of each fiscal year for which amounts are appropriated pursuant to this Act.

EVALUATION

SEC. 15. Within three years from the date of the enactment of this Act, the Secretary shall appoint a public committee, none of the members of which shall have been directly concerned with the preparation of plans, administration of programs or participation in programs under this Act. The Committee shall evaluate the significance and impact of the program under this Act and make recommendations concerning the program. A report shall be transmitted to the Secretary within sixty days after the end of such three-year period.

TERMINATION

SEC. 16. Whenever the Secretary, after reasonable notice and opportunity for hearing to any designated agency or participating institution receiving funds under this Act finds that—

(a) the agency or institution is not complying substantially with provisions of this Act, with the regulations promulgated by the Secretary, or with the approved annual technical services program; or

(b) any funds paid to the agency or institution under the provisions of this Act have been lost, misapplied, or otherwise diverted from the purposes for which they were paid or furnished—

the Secretary shall notify such agency or institution that no further payments will be made under the provisions of this Act until he is satisfied that there is substantial compliance or the diversion has been corrected or, if compliance or correction is impossible, until such agency or institution repays or arranges for the repayment of Federal funds which have been diverted or improperly expended.

REPAYMENT

SEC. 17. Upon notice by the Secretary to any designated agency or participating institution that no further payments will be made pending substantial compliance, correction, or repayment under section 16, any funds which may have been paid to such agency or institution under this Act and which are not expended by the agency or institution on the date of such notice, shall be repaid to the Secretary and be deposited to the account of the appropriations from which they originally were paid.

RECORDS

SEC. 18. (a) Each recipient of a grant under this Act shall keep such records as the Secretary shall prescribe, including records which fully disclose the amount and the disposition of such grant, the total cost of the related approved program, the amount and nature of the cost of the program supplied by other sources, and such other records as will facilitate an effective audit.

(b) The Secretary and the Comptroller General of the United States, or any of their duly authorized representatives, shall have access to any books, documents, papers, and records of the recipient that are pertinent to amounts received under this Act.

SHORT TITLE

SEC. 19. This Act may be cited as the "State Technical Services Act of 1965".

And to amend the title so as to read: "An Act to promote commerce and encourage economic growth by supporting State and interstate programs to place the findings of science usefully in the hands of American enterprise."

Mr. MAGNUSON. Mr. President, I move that the Senate concur in the amendments of the House to the bill S. 949, a bill to promote commerce and encourage economic growth by supporting State and interstate programs to place the findings of science usefully in the hands of American enterprise.

This bill would authorize a broad, imaginative program of matching grants to the States for a cooperative program so that the results and benefits of modern science and technology may be effectively used by American commerce and industry.

The bill was approved by the Senate on July 19 without opposition, after having been carefully considered, reviewed and modified by the Senate Commerce Committee. The measure was cosponsored in the Senate by most of the members of the committee and by other Senators. It

was introduced by me and the cosponsors are Senators BYRD of West Virginia, RIBICOFF, MCGOVERN, PASTORE, MONRONEY, LAUSCHE, BARTLETT, HARTKE, MCGEE, HART, CANNON, BREWSTER, NEUBERGER, BASS, COTTON, SCOTT, PROUTY, PEARSON, and DOMINICK practically all the members of the Commerce Committee.

As the bill has come back to the Senate from the House, it includes only a few significant changes—changes which do not, in the opinion of the committee, warrant a conference with the House.

The differences between the Senate and House bills may be briefly summarized as follows:

First. The Senate bill authorized appropriations for a 5-year period and required a full evaluation of the program by an independent review board after 5 years. The House bill reduced the period of authorization to 3 years and required evaluation of the program after the first 3 years. This is a reasonable change. An initial 3-year authorization will get the program well underway and a comprehensive review of this new undertaking after 3 years will be helpful in making sure that it is working effectively and properly.

The House bill also eliminated a provision in the Senate bill permitting the Secretary of Commerce to provide additional funds, up to 10 percent, to regional or interstate technical services program without matching funds.

The House made other, more technical amendments, that clarify and strengthen the bill. So I hope the Senate will agree to the motion, approve the House amendments, and complete Congressional action on this important, farsighted measure.

Mr. President, I move that the Senate concur in the amendments of the House.

The motion was agreed to.

Mr. MAGNUSON. Mr. President, the Senator from Pennsylvania [Mr. SCOTT], who has long been active in the promotion of this bill, and one of the prime movers, with myself, in seeking its enactment—really, the bill should be called the Magnuson-Scott bill—has prepared a written statement. The Senator, unfortunately, could not be present this afternoon because of official business. I ask unanimous consent that his statement be printed in the RECORD at this point.

There being no objection, the statement was ordered to be printed in the RECORD, as follows:

STATEMENT BY SENATOR SCOTT ON S. 949

I am pleased that the Senate today has approved and cleared for the President's signature the Magnuson-Scott bill to establish a State technical services program.

The State Technical Services Act of 1965 will launch a program designed to put into the hands of local businesses and industry throughout the Nation the up-to-date results of scientific and technological research and development. In this manner, the program can contribute to economic growth and more jobs at home and the improvement of America's competitive position in world markets. My Commonwealth of Pennsylvania stands ready to participate actively in this program which I feel can be very beneficial to Pennsylvania's economy and industrial development.

As originally approved by the Senate, S. 949 provided a 5-year authorization of funds for this matching Federal-State grant program. The other body saw fit to cut this authorization back to 3 years. I believe that this change is satisfactory because it strengthens the reasonable controls which we added to the bill in committee without hindering the effective implementation of the program.

I am glad to have participated in the drafting of the State Technical Services Act of 1965, and I want to salute my colleagues in both bodies who, with the expert assistance of the Assistant Secretary of Commerce for Science and Technology, Mr. Holloman, and his staff, have made this beneficial program possible.

RESEARCH DEVELOPMENT IN HIGH-SPEED GROUND TRANSPORTATION

Mr. MAGNUSON. Mr. President, I ask that the Presiding Officer lay before the Senate the amendments of the House to the bill (S. 1588).

The PRESIDING OFFICER laid before the Senate the amendments of the House of Representatives to the bill (S. 1588), to authorize the Secretary of Commerce to undertake research, development, and demonstrations in high-speed ground transportation, and for other purposes, which were, to strike out all after the enacting clause and insert:

That, consistent with the objective of promoting a safe, adequate, economical, and efficient national transportation system, the Secretary of Commerce (hereafter in this Act referred to as the "Secretary") is authorized to undertake research and development in high-speed ground transportation, including, but not limited to, components such as materials, aerodynamics, vehicle propulsion, vehicle control, communications, and guideways.

SEC. 2. The Secretary is authorized to contract for demonstrations to determine the contributions that high-speed ground transportation could make to more efficient and economical intercity transportation systems. Such demonstrations shall be designed to measure and evaluate such factors as the public response to new equipment, higher speeds, variations in fares, improved comfort and convenience, and more frequent service. In connection with contracts for demonstrations under this section, the Secretary shall provide for financial participation by private industry to the maximum extent practicable.

SEC. 3. Nothing in this Act shall be deemed to limit research and development carried out under the first section or demonstrations contracted for under section 2 to any particular mode of high-speed ground transportation.

SEC. 4. The Secretary is authorized to collect and collate transportation data, statistics, and other information which he determines will contribute to the improvement of the national transportation system. In carrying out this activity, the Secretary shall utilize the data, statistics, and other information available from Federal agencies and other sources to the greatest practicable extent. The data, statistics, and other information collected under this section shall be made available to other Federal agencies and to the public insofar as practicable.

SEC. 5. (a) There is hereby established in the Department of Commerce an advisory committee consisting of seven members who shall be appointed by the Secretary without regard to the civil service laws. The Secretary shall designate one of the members of the Advisory Committee as its Chairman. Members of the Advisory Committee shall

be selected from among leading authorities in the field of transportation.

(b) The Advisory Committee shall advise the Secretary with respect to policy matters arising in the administration of this Act, particularly with respect to research and development carried out under the first section and contracts for demonstrations entered into under section 2.

(c) Members of the Advisory Committee, while attending its meetings, shall be entitled to receive compensation at rates to be fixed by the Secretary but not exceeding \$100 per day, including travel time; and while away from their homes or regular places of business they may be allowed travel expenses, including per diem in lieu of subsistence, as authorized by section 5 of the Administrative Expenses Act of 1946 (5 U.S.C. 73b-2) for persons in the Government service employed intermittently.

SEC. 6. (a) In carrying out the provisions of section 2 of this Act, the Secretary shall provide fair and equitable arrangements, as determined by the Secretary of Labor, to protect the interests of the employees of any common carrier who are affected by any demonstration carried out under a contract between the Secretary and such carrier under such section. Such protective arrangements shall include, without being limited to, such provisions as may be necessary for (1) the preservation of rights, privileges, and benefits (including continuation of pension rights and benefits) to such employees under existing collective-bargaining agreements, or otherwise; (2) the continuation of collective-bargaining rights; (3) the protection of such individual employees against a worsening of their positions with respect to their employment as a result of such demonstration; (4) assurances of priority of reemployment of employees terminated or laid off as a result of such demonstration; and (5) paid training or retraining programs. Such arrangements shall include provisions protecting individual employees against a worsening of their positions with respect to their employment as the result of such demonstrations which shall in no event provide benefits less than those established pursuant to section 5(2)(f) of the Interstate Commerce Act (49 U.S.C. 5). Any contract entered into pursuant to the provisions of section 2 of this Act shall specify the terms and conditions of such protective arrangements.

(b) The Secretary shall take such action as may be necessary to insure that all laborers and mechanics employed by contractors or subcontractors in the performance of construction work financed with the assistance of funds received under any contract or agreement entered into under this Act shall be paid wages at rates not less than those prevailing on similar construction in the locality as determined by the Secretary of Labor in accordance with the Davis-Bacon Act, as amended. The Secretary shall not enter into any such contract or agreement without first obtaining adequate assurance that required labor standards will be maintained upon the construction work. The Secretary of Labor shall have with respect to the labor standards specified in this subsection, the authority and functions set forth in Reorganization Plan Numbered 14 of 1950 (15 F.R. 3176; 64 Stat. 1267; 5 U.S.C. 133z-15), and section 2 of the Act of June 13, 1934, as amended (48 Stat. 948; 40 U.S.C. 276c).

SEC. 7. In exercising the authority granted in the first section and section 2 of this Act, the Secretary may lease, purchase, develop, test, and evaluate new facilities, equipment, techniques, and methods and conduct such other activities as may be necessary, but nothing in this Act shall be deemed to authorize the Secretary to acquire any interest, in any line of railroad.

SEC. 8. (a) (1) In exercising the authority granted under this Act, the Secretary is authorized to enter into agreements and to

contract with public or private agencies, institutions, organizations, corporations, and individuals, without regard to sections 3648 and 3709 of the Revised Statutes (31 U.S.C. 529; 41 U.S.C. 5).

(2) Any such agreement or contract shall contain provisions effective to insure that all information, uses, processes, patents and other developments resulting from any activity undertaken pursuant to such agreement or contract will be made readily available on fair and equitable terms to the transportation industry and industries engaging in furnishing supplies to such industry.

(3) To the maximum extent practicable, the private agencies, institutions, organizations, corporations, and individuals with which the Secretary enters into such agreements or contracts to carry out research and development under this Act shall be geographically distributed throughout the United States.

(4) Each agreement or contract entered into under this Act under other than competitive bidding procedures, as determined by the Secretary, shall provide that the Secretary and the Comptroller General of the United States, or any of their duly authorized representatives, may, for the purpose of audit and examination, have access to any books, documents, papers, and records of the parties to such agreement or contract which are pertinent to the operations or activities under such agreement or contract.

(b) The Secretary is authorized to appoint, subject to the civil service laws and regulations, such personnel as may be necessary to enable him to carry out efficiently his functions and responsibilities under this Act. The Secretary is further authorized to procure services as authorized by section 15 of the Act of August 3, 1946 (5 U.S.C. 55a), but at rates for individuals not to exceed \$100 per diem, unless otherwise specified in an appropriation Act.

SEC. 9. In exercising the authority granted under this Act, the Secretary shall consult and cooperate, as he deems appropriate, with the Administrator of the Housing and Home Finance Agency and other departments and agencies, Federal, State, and local. The Secretary shall further consult and cooperate, as he deems appropriate, with institutions and private industry.

SEC. 10. (a) The Secretary shall report to the President and the Congress not less often than annually with respect to activities carried out under this Act.

(b) The Secretary shall report to the President and the Congress the results of his evaluation of the research and development program and the demonstration program authorized by this Act, and shall make recommendations to the President and the Congress with respect to such future action as may be appropriate in the light of these results and their relationship to other modes of transportation in attaining the objective of promoting a safe, adequate, economical, and efficient national transportation system.

(c) The Secretary shall, if requested by any appropriate committee of the Senate or House of Representatives, furnish such committee with information concerning activities carried out under this Act and information obtained from research and development carried out with funds appropriated pursuant to this Act.

SEC. 11. There are hereby authorized to be appropriated such sums as may be necessary to carry out the provisions of this Act, but not to exceed \$20,000,000 for the fiscal year ending June 30, 1966; \$35,000,000 for the fiscal year ending June 30, 1967; and \$35,000,000 for the fiscal year ending June 30, 1968. Such sums shall remain available until expended.

SEC. 12. This Act shall terminate on June 30, 1969. The termination of this Act shall not affect the disbursement of funds under, or the carrying out of, any contract, commitment, or other obligation entered into pur-

suant to this Act prior to such date of termination.

And to amend the title so as to read: "An Act to authorize the Secretary of Commerce to undertake research and development in high-speed ground transportation, and for other purposes."

Mr. MAGNUSON. I move that the Senate disagree to the House amendments and ask for a conference with the House, and that the Chair appoint the conferees on the part of the Senate.

The motion was agreed to; and the Presiding Officer appointed Mr. MAGNUSON, Mr. PASTORE, Mr. LAUSCHE, Mr. HARTKE, Mr. MORTON, and Mr. SCOTT conferees on the part of the Senate.

NEWSPAPER GROWTH

Mr. MAGNUSON. Mr. President, when we pick up the morning newspaper at breakfast, or read the evening paper after a busy day, we often reflect upon the enormous service rendered by those who perform this service.

We could well reflect too upon the size of this industry and how it has grown.

This growth was brought home to me through an editorial carried in the Everett, Wash., Herald some weeks ago.

I ask the unanimous consent that the editorial be printed in the RECORD.

There being no objection, the editorial was ordered to be printed in the RECORD, as follows:

NEWSPAPERS

The newspaper business is one of the largest manufacturing industries in our Nation's economy. Just the physical production of newspapers is so massive that it constitutes 1.53 percent of the Nation's total industrial activity. This activity is measured by the Federal Reserve Board's index of industrial production. For example the value added by the auto industry represents 1.82 percent of the Nation's total activity whereas newspapers represent 1.53 percent, all meat products 1.52 percent, drugs and medicine 1.48 percent, lumber 0.91 percent, TV sets 0.33 percent, etc.

Dr. John Udell of the University of Wisconsin notes that newspaper growth can be measured in other ways also. U.S. newspapers employ one-third million Americans. Thousands of additional persons are employed in the production of newsprint, printing press, and other products needed to supply the Nation's 1,763 daily papers. From 1947 through 1963 newspaper employment expanded 31 percent—more rapidly than total employment in the United States, which increased 19 percent, and 3½ times as fast as employment in all manufacturing industries.

A significant measure of newspaper growth is newsprint consumption, which has increased from 4.3 million tons in 1946 to over 8 million tons in 1964, a growth of 87 percent. The greatest growth of U.S. newsprint consumption has occurred in cities and towns of less than 100,000 population—which have experienced a 70-percent greater expansion than the average of all newspapers in the United States.

And the future of newspapers looks even brighter. Dr. Udell, pointing to projected population increase in the 15-year period between 1965 and 1980, forecasts from 16.4 to 22 million more newspaper subscribers by the latter year. He predicts flatly: "Daily circulation should increase more in the decade ahead than in any other decade in the history of the U.S. newspaper business."

RIVER OF THE WEST

Mr. MAGNUSON. Mr. President, the largest and greatest river of the Western Hemisphere pouring into the Pacific Ocean is the mighty Columbia, arising in the Canadian Rockies, crossing my State of Washington, and for several hundred miles forming the boundary between Washington and Oregon.

Tributaries of the Columbia, including the 1,038-mile Snake, bisect Idaho, and reach into Wyoming, Montana, Utah, and Nevada.

What this great river system means to Pacific Northwest and Inland Empire Industry, commerce and economy is told by my distinguished colleague in the House of Representatives, the Honorable JULIA BUTLER HANSEN, in a guest editorial in the July Newsletter of the American Mail Line.

Mrs. HANSEN, whose congressional district extends from a few miles above famous Bonneville Dam to the Columbia's mouth, and whose childhood and much of her adult life has been spent on the banks of this great river, also weaves into her editorial some of its history, including early trade with the Orient, and in conclusion forecasts a golden future for this enormous river basin with unsurpassed potential.

Mr. President, I ask unanimous consent that the editorial, "River of West," by the Honorable JULIA BUTLER HANSEN, of Washington, be printed in the RECORD at this point.

There being no objection, the editorial was ordered to be printed in the RECORD, as follows:

RIVER OF THE WEST

(By Congresswoman JULIA BUTLER HANSEN, Committee on Appropriations, Subcommittee on Interior, Subcommittee on Foreign Operations)

Years ago, as a barelegged small girl fishing mudcats from the cannery dock at Cathlamet on the lower Columbia River, I began to dream of trade and the world it touched. As the last brigantines sailed upriver to load lumber, when blue-clad pig-tailed Chinese crews came each spring to man the sprawling whitewashed salmon canneries, I began to understand the language and customs of other people.

Ever since that almost unbelievably leisurely era, I've realized that perhaps one who stands on the shore of a great moving river or at the edge of a sea touching far nations has perhaps a wider vision than that possessed by men sitting on the prairie. At least, there is the obligation for a longer look and deeper comprehension as to the width of the world and the lives of its people.

The sails of those ships, steamboat whistles in the fog, towboats with logs are part of a world of woven sea-touched magic which is the story of the Columbia River. Two centuries ago, the Columbia was known as the mysterious, undiscovered "River of the West." Thomas Jefferson was sure that it existed—some place beyond the high mountains—a mighty stream for ports, growth, and trade.

William Cullen Bryant said, "Here rolls the Oregon and hears nothing but the sound of its own dashing."

When Capt. John Kendrick and Robert Gray sailed unknown western waters they were under orders, "to avoid offense to any foreign power, to treat the natives with kindness and Christianity, to obtain a cargo of

furs on the American coast and to proceed with the same to China and to return from China with a cargo of tea and carry the tea to Boston."

That was the distillate of our trade beginnings.

In 1792, 300 years after Columbus sailed for America, Gray crossed the bar of the Columbia and on May 11 of that year said, "We found this to be a large river of fresh water."

Later Vancouver explored our river, Britain and America developed it and finally America made it her own. From furs bound for Canton and London and farm products bound for "Owyhee" it has become in the 20th century a tremendous contributing factor to our national export trade.

In that quiet country where was once no sound but that of its own dashing 7,000,000 busy people now live—farmers, fishermen, shippers, manufacturers and workers in the forests, mills, and mines.

From the loneliness of those days when the small, weathered sails of Captain Gray's ship stood against that wide western horizon, we have moved with speed and progress. The Columbia has become one of the major waterways of the world. Ports on this great river, due to the intelligent leadership of business, labor and public legislative bodies are now among the most modern in the United States. Thousands of tons of wheat and other products are shipped by barge, rail and trucks to our ports. There is no single day that passes without the flag of some foreign nation flying against the western hills—still forested and green—as another ship sails out of the Columbia with Northwest commerce to far ports of this earth.

One of our leading trade partners is Japan. The State of Washington's commerce with the Far East rose from \$42,911,000 in 1960 to \$76,500,000 in 1963.

Southeast Asia, the Philippines, India, and other nations, with names almost as magic as the spices of old, are part and parcel of this ever-growing trade.

In the Columbia Basin also lies 40 percent of the nation's hydroelectric potential, almost unlimited fresh water, abundant recreation areas, commercial fishing.

There is today no end to the dream of growth in the land that surrounds the Columbia and there is no end also to the river that bears cargo and men in the eternal tides of time bound for the future.

LEGISLATIVE PROGRAM—FOOD AND AGRICULTURE ACT OF 1965

Mr. KUCHEL. Mr. President, if I may have the attention of the distinguished majority leader, I should like him to express his views on what may transpire in the Senate during the remainder of today, and what he contemplates will be our labors in the Senate tomorrow.

Mr. MANSFIELD. Mr. President in response to the questions raised by the distinguished acting minority leader, the Senator from California [Mr. KUCHEL], I first ask unanimous consent that H.R. 9811, the farm bill, be laid before the Senate immediately upon being reported.

Mr. KUCHEL. Is that bill at the desk yet?

Mr. MANSFIELD. Not yet, but it will be here by midnight.

Mr. President, I ask unanimous consent that the Senate proceed to consideration of H.R. 9811, the Food and Agriculture Act of 1965, and that it be made the pending business when reported.



Public Law 89-182
89th Congress, S. 949
September 14, 1965

An Act

To promote commerce and encourage economic growth by supporting State and interstate programs to place the findings of science usefully in the hands of American enterprise.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

State Technical
Services Act of
1965.

DECLARATION OF PURPOSE

SECTION 1. That Congress finds that wider diffusion and more effective application of science and technology in business, commerce, and industry are essential to the growth of the economy, to higher levels of employment, and to the competitive position of United States products in world markets. The Congress also finds that the benefits of federally financed research, as well as other research, must be placed more effectively in the hands of American business, commerce, and industrial establishments. The Congress further finds that the several States through cooperation with universities, communities, and industries can contribute significantly to these purposes by providing technical services designed to encourage a more effective application of science and technology to both new and established business, commerce, and industrial establishments. The Congress, therefore, declares that the purpose of this Act is to provide a national program of incentives and support for the several States individually and in cooperation with each other in their establishing and maintaining State and interstate technical service programs designed to achieve these ends.

DEFINITIONS

SEC. 2. For the purposes of this Act—

(a) "Technical services" means activities or programs designed to enable businesses, commerce, and industrial establishments to acquire and use scientific and engineering information more effectively through such means as—

(1) preparing and disseminating technical reports, abstracts, computer tapes, microfilm, reviews, and similar scientific or engineering information, including the establishment of State or interstate technical information centers for this purpose; 79 STAT. 679

(2) providing a reference service to identify sources of engineering and other scientific expertise; and 79 STAT. 680

(3) sponsoring industrial workshops, seminars, training programs, extension courses, demonstrations, and field visits designed to encourage the more effective application of scientific and engineering information.

(b) "Designated agency" means the institution or agency which has been designated as administrator of the program for any State or States under section 3 or section 7 of this Act.

(c) "Qualified institution" means (1) an institution of higher learning with a program leading to a degree in science, engineering, or business administration which is accredited by a nationally recognized accrediting agency or association to be listed by the United States Commissioner of Education, or such an institution which is listed separately after evaluation by the United States Commissioner of Education pursuant to this subsection; or (2) a State agency or a private, nonprofit institution which meets criteria of competence established by the Secretary of Commerce and published in the Fed-

eral Register. For the purpose of this subsection the United States Commissioner of Education shall publish a list of nationally recognized accrediting agencies or associations which he determines to be reliable authority as to the quality of science, engineering, or business education or training offered. When the Commissioner determines that there is no nationally recognized accrediting agency or association qualified to accredit such programs, he shall publish a list of institutions he finds qualified after prior evaluation by an advisory committee, composed of persons he determines to be specially qualified to evaluate the training provided under such programs.

(d) "Participating institution" means each qualified institution in a State, which participates in the administration or execution of the State technical services program as provided by this Act.

(e) "Secretary" means the Secretary of Commerce.

(f) "State" means one of the States of the United States, the District of Columbia, the Commonwealth of Puerto Rico, or the Virgin Islands.

(g) "Governor", in the case of the District of Columbia, means the Board of Commissioners of the District of Columbia.

SELECTION OF DESIGNATED AGENCY

SEC. 3. The Governor of any State which wishes to receive Federal payments under this Act in support of its existing or planned technical services program shall designate, under appropriate State laws and regulations, an institution or agency to administer and coordinate that program and to prepare and submit a plan and programs to the Secretary of Commerce for approval under this Act.

PLANS AND PROGRAMS

SEC. 4. The designated agency shall prepare and submit to the Secretary in accordance with such regulations as he may publish—

Five-year plan.

(a) A five-year plan which may be revised annually and which shall: (1) outline the technological and economic conditions of the State, taking into account its region, business, commerce, and its industrial potential and identify the major regional and industrial problems; (2) identify the general approaches and methods to be used in the solution of these problems and outline the means for measuring the impact of such assistance on the State or regional economy; and (3) explain the methods to be used in administering and coordinating the technical services program.

79 STAT. 680

79 STAT. 681

Annual technical services program.

(b) An annual technical services program which shall (1) identify specific methods, which may include contracts, for accomplishing particular goals and outline the likely impact of these methods in terms of the five-year plan; (2) contain a detailed budget, together with procedures for adequate fiscal control, fund accounting, and auditing, to assure proper disbursement for funds paid to the State under this Act; and (3) indicate the specific responsibilities assigned to each participating institution in the State.

REVIEW OF PLANS AND PROGRAMS BY SECRETARY

SEC. 5. The Secretary shall not accept the five-year plan of a State for review and approval under this Act unless the Governor of the State or his designee determines and certifies that the plan is consistent with State policies and objectives; and the Secretary shall not accept an annual technical services program for review and approval under

this Act unless the designated agency has, as certified thereto by the Governor or his designee—

(a) invited all qualified institutions in the State to submit proposals for providing technical services under the Act;

(b) coordinated its programs with other States and with other publicly supported activities within the State, as appropriate;

(c) established adequate rules to insure that no officer or employee of the State, the designated agency, or any participating institution, shall receive compensation for technical services he performs, for which funds are provided under this Act, from sources other than his employer, and shall not otherwise maintain any private interest in conflict with his public responsibility; Conflict of interest.

(d) determined that matching funds will be available from State or other non-Federal sources;

(e) determined that such technical services program does not provide a service which on the date of such certification is economically and readily available in such State from private technical services, professional consultants, or private institutions;

(f) planned no services specially related to a particular firm or company, public work, or other capital project except insofar as the services are of general concern to the industry and commerce of the community, State, or region;

(g) provided for making public all reports prepared in the course of furnishing technical services supported under this Act or for making them available at cost to any person on request. Availability of information.

APPROVAL BY SECRETARY

SEC. 6. The Secretary shall review the five-year plan and each annual program submitted by a designated agency under section 4 or section 7, and shall approve only those which (1) bear the certification required by the Governor or his designee under section 5; (2) comply with regulations and meet criteria that the Secretary shall promulgate and publish in the Federal Register; and (3) otherwise accomplish the purposes of this Act.

INTERSTATE PROGRAMS

SEC. 7. Two or more States may cooperate in administering and coordinating their plans and programs supported under this Act, in which event all or part of the sums authorized and payable under section 10 to all of the cooperating States may be paid to the designated agency, participating institutions, or persons authorized to receive them under the terms of the agreement between the cooperating States. 79 STAT. 681
79 STAT. 682
 When the cooperative agreement designates an interstate agency to act on behalf of all of the cooperating States, it shall submit to the Secretary for review and approval under section 6 an interstate five-year plan and an annual interstate technical services program which, as nearly as practicable, shall meet the requirements of section 4 and section 5.

CONSENT OF CONGRESS

SEC. 8. (a) The consent of the Congress is given to any two or more States to enter into agreements or compacts, not in conflict with any law of the United States, for cooperative efforts and mutual assistance and in designating agencies, under section 7, for accomplishing the purposes of this Act. Interstate compacts.

(b) The right to alter, amend, or repeal this section, or consent granted by this section, is expressly reserved.

ADVISORY COUNCIL

SEC. 9. Each designated agency shall appoint an advisory council for technical services, the members of which shall represent broad community interests and shall be qualified to evaluate programs submitted under section 4. The advisory council shall review each annual program, evaluate its relation to the purposes of this Act, and report its findings to the designated agency and the Governor or his designee. Each report of each advisory council shall be available to the Secretary on request. Members of any such advisory council shall not be compensated for serving as such, but may be reimbursed for necessary expenses incurred by them in connection with attending meetings of any advisory council of which they are members.

Reports.

Expenses.

AUTHORIZATION OF APPROPRIATIONS AND PAYMENTS

SEC. 10. (a) There are authorized to be appropriated for the purposes of this Act, \$10,000,000 for the fiscal year ending June 30, 1966; \$20,000,000 for the fiscal year ending June 30, 1967; \$30,000,000 for the fiscal year ending June 30, 1968.

(b) From these amounts, the Secretary is authorized to make an annual payment to each designated agency, participating institution, or person authorized to receive payments in support of each approved technical services program. Maximum amounts which may be paid to the States under this subsection shall be fixed in accordance with regulations which the Secretary shall promulgate and publish in the Federal Register from time to time, considering (1) population according to the last decennial census; (2) business, commercial, industrial and economic development and productive efficiency; and (3) technical resources.

Publication in
Federal Register.

(c) The Secretary may reserve an amount equal to not more than 20 per centum of the total amount appropriated for each year under this section and is authorized to make payments from such amount to any designated agency or participating institution for technical services programs which he determines have special merit or to any qualified institution for additional programs which he determines are necessary to accomplish the purposes of this Act, under criteria and regulations that he shall promulgate and publish in the Federal Register.

Publication in
Federal Register.

79 STAT. 682

79 STAT. 683

(d) An amount equal to not more than 5 per centum of the total amount appropriated each year under this section shall be available to the Secretary for the direct expenses of administering this Act.

Restrictions.

(e) (1) No amount paid for any technical services program under subsection (b) or (c) shall exceed the amount of non-Federal funds expended to carry out such program: *Provided*, That the Secretary may pay an amount not to exceed \$25,000 a year for each of the first three fiscal years to each designated agency, other than a designated agency under section 7, to assist in the preparation of the five-year plan and the initial annual technical services programs, without regard to any of the preceding requirements of this section.

(2) No funds appropriated pursuant to the provisions of this section shall be paid to any designated agency, participating institution, or person on account of any such agency or institution, to carry out any technical services activity or program in any State if such activity or program duplicates any activity or program readily available in such State from Federal or State agencies, including publicly supported institutions of higher learning in such State.

ASSISTANCE BY THE SECRETARY

SEC. 11. The Secretary is authorized and directed to aid designated agencies in carrying out their technical services programs by providing reference services which a designated agency may use to obtain scientific, technical, and engineering information from sources outside the State or States which it serves, for the purposes of this Act.

RULES AND REGULATIONS

SEC. 12. The Secretary is authorized to establish such policies, standards, criteria, and procedures and to prescribe such rules and regulations as he may deem necessary or appropriate for the administration of this Act.

LIMITATIONS

SEC. 13. (a) Nothing contained in this Act shall be construed as authorizing a department, agency, officer, or employee of the United States to exercise any direction, supervision, or control over, or impose any requirements or conditions with respect to the personnel, curriculum, methods of instruction, or administration of any educational institution.

(b) Nothing contained in this Act shall be deemed to affect the functions or responsibilities under law of any other department or agency of the United States.

ANNUAL REPORT

SEC. 14. (a) Each designated agency shall make an annual report to the Secretary on or before the first day of September of each year on the work accomplished under the technical services program and the status of current services, together with a detailed statement of the amounts received under any of the provisions of this Act during the preceding fiscal year, and of their disbursement.

(b) The Secretary shall make a complete report with respect to the administration of this Act to the President and the Congress not later than January 31 following the end of each fiscal year for which amounts are appropriated pursuant to this Act.

Report to
President
and Congress.
79 STAT. 683
79 STAT. 684

EVALUATION

SEC. 15. Within three years from the date of the enactment of this Act, the Secretary shall appoint a public committee, none of the members of which shall have been directly concerned with the preparation of plans, administration of programs or participation in programs under this Act. The Committee shall evaluate the significance and impact of the program under this Act and make recommendations concerning the program. A report shall be transmitted to the Secretary within sixty days after the end of such three-year period.

Public com-
mittee, appoint-
ment.

Report.

TERMINATION

SEC. 16. Whenever the Secretary, after reasonable notice and opportunity for hearing to any designated agency or participating institution receiving funds under this Act finds that—

Noncompliance.

(a) the agency or institution is not complying substantially with provisions of this Act, with the regulations promulgated by the Secretary, or with the approved annual technical services program; or

(b) any funds paid to the agency or institution under the provisions of this Act have been lost, misapplied, or otherwise diverted from the purposes for which they were paid or furnished—

the Secretary shall notify such agency or institution that no further payments will be made under the provisions of this Act until he is satisfied that there is substantial compliance or the diversion has been corrected or, if compliance or correction is impossible, until such agency or institution repays or arranges for the repayment of Federal funds which have been diverted or improperly expended.

REPAYMENT

SEC. 17. Upon notice by the Secretary to any designated agency or participating institution that no further payments will be made pending substantial compliance, correction, or repayment under section 16, any funds which may have been paid to such agency or institution under this Act and which are not expended by the agency or institution on the date of such notice, shall be repaid to the Secretary and be deposited to the account of the appropriations from which they originally were paid.

RECORDS

SEC. 18. (a) Each recipient of a grant under this Act shall keep such records as the Secretary shall prescribe, including records which fully disclose the amount and the disposition of such grant, the total cost of the related approved program, the amount and nature of the cost of the program supplied by other sources, and such other records as will facilitate an effective audit.

(b) The Secretary and the Comptroller General of the United States, or any of their duly authorized representatives, shall have access to any books, documents, papers, and records of the recipient that are pertinent to amounts received under this Act.

SHORT TITLE

SEC. 19. This Act may be cited as the "State Technical Services Act of 1965".

Approved September 14, 1965.

LEGISLATIVE HISTORY:

HOUSE REPORT No. 817 accompanying H. R. 3420 (Comm. on Interstate & Foreign Commerce).

SENATE REPORT No. 421 (Comm. on Commerce).

CONGRESSIONAL RECORD, Vol. 111 (1965):

July 19: Considered and passed Senate.

Sept. 1: Considered and passed House, amended, in lieu of H. R. 3420.

Sept. 7: Senate concurred in House amendments.

